

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the application of: Wei Gu

Serial No.: N/A

Filed: Herewith

For: NOVEL G-PROTEIN COUPLED  
RECEPTORS AND USES THEREFOR

Attorney Docket No.: MNI-080CP

BOX SEQUENCE  
Commissioner for Patents  
Washington, D.C. 20231

**TRANSMITTAL LETTER FOR DISKETTE CONTAINING SEQUENCE LISTING**

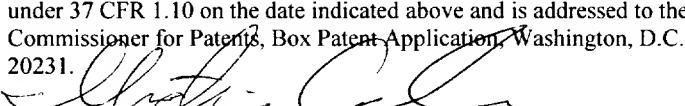
Dear Sir:

Enclosed is a diskette which contains a computer readable form of the Sequence Listing for the patent application filed herewith. The Sequence Listing complies with the requirements of 37 C.F.R. § 1.821. The information recorded in computer readable form is identical to the written Sequence Listing appearing on pages 1-45 submitted herewith, as required by 37 C.F.R. §1.821(f). The computer readable form of the Sequence Listing contained on the enclosed diskette is understood to comply with the requirements of § 1.824(d).

"Express Mail" mailing label number: EL 683 638 611 US

Date of Deposit: May 8, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Box Patent Application, Washington, D.C. 20231.

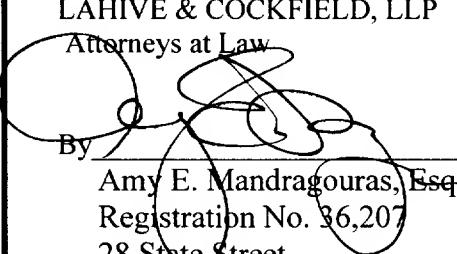
  
Signature

Ilidio P. Cardoso  
Please Print Name of Person Signing

LAHIVE & COCKFIELD, LLP

Attorneys at Law

By

  
Amy E. Mandragouras, Esq.  
Registration No. 36,207  
28 State Street  
Boston, MA 02109  
Telephone: 617-227-7400  
Facsimile: 617-742-4214

SEQUENCE LISTING

<110> Gu, Wei

<120> NOVEL G-PROTEIN COUPLED RECEPTORS AND USES THEREFOR

<130> MNI-080CP

<140>

<141>

<150> 09/556,588

<151> 2000-05-08

<150> 60/132,896

<151> 1999-05-06

<160> 12

<170> PatentIn Ver. 2.0

<210> 1

<211> 3637

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (222)..(3122)

<220>

<221> misc\_feature

<222> (3554)

<223> n = any nucleotide

<400> 1

gtcgaccacat gcttccgcac tcaacaatgc ctggccctct ctgactgcac cgtccgcgc 60

cgcgtccgc cggccgcgc aagccaagtc gagcggggc gttgccacc gacggcacag 120

cccttgggcc cggccggac caggaggtga gcccgcgcg cacagctccg tgcgctcgcc 180

cgtctgagcg cccgcaggt gccccgcagc cccgcgcga g atg cac agc ccg cct 236

Met His Ser Pro Pro

1

5

ggg ctc ctg gcg ctg tgg ctt tgc gct gtg ctg tgc gca tcg gcg 284  
Gly Leu Leu Ala Leu Trp Leu Cys Ala Val Leu Cys Ala Ser Ala Arg

10

15

20

ggg ggc agc gac ccc cag cct ggc ccg ggg cgt ccc gcc tgc ccg gct 332  
Gly Gly Ser Asp Pro Gln Pro Gly Pro Arg Pro Ala Cys Pro Ala

25

30

35

ccc tgc cac tgc cag gag gac ggc atc atg ctg tcc gct gac tgc tcc 380  
Pro Cys His Cys Gln Glu Asp Gly Ile Met Leu Ser Ala Asp Cys Ser

40

45

50

gag ctc ggg ctc tca gtg gtg cct gcg gac ctg gac ccc ctg acg gct Glu Leu Gly Leu Ser Val Val Pro Ala Asp Leu Asp Pro Leu Thr Ala	55	60	65	428
tac cta gac ctc agt atg aac aac ctc acg gag ctt cag ccg ggt ctc Tyr Leu Asp Leu Ser Met Asn Asn Leu Thr Glu Leu Gln Pro Gly Leu	70	75	80	476
ttc cac cac ctg cgc ttc ctg gag gag ctg ccg ctc tca ggg aac cac Phe His His Leu Arg Phe Leu Glu Glu Leu Arg Leu Ser Gly Asn His	90	95	100	524
ctc tca cac atc ccg gga cag gca ttc tcc ggc ctc cac agc ctc aaa Leu Ser His Ile Pro Gly Gln Ala Phe Ser Gly Leu His Ser Leu Lys	105	110	115	572
att cta atg ctg cag agc aac cag ctc cgt ggg atc cca gca gag gca Ile Leu Met Leu Gln Ser Asn Gln Leu Arg Gly Ile Pro Ala Glu Ala	120	125	130	620
cta tgg gag ctg ccc agc ctg cag tcg ctg cgc cta gat gct aat ctc Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg Leu Asp Ala Asn Leu	135	140	145	668
atc tcc ctg gtc cct gag aga agc ttt gag ggg ctc tcc tcc ctc cgc Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly Leu Ser Ser Leu Arg	150	155	160	716
cac ctc tgg ctg gat gac aat gca ctc act gag atc ccc gtc aga gct His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu Ile Pro Val Arg Ala	170	175	180	754
ctc aac aac ctt cct gcc cta cag gcc atg acc ttg gct ctc aac cat Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr Leu Ala Leu Asn His	185	190	195	812
atc cgc cac atc cct gac tat gcc ttc cag aac ctc acc agt ctt gtg Ile Arg His Ile Pro Asp Tyr Ala Phe Gln Asn Leu Thr Ser Leu Val	200	205	210	860
gtg ctg cat cta cat aac aac cgc atc cag cat gtg ggg acc cac agc Val Leu His Leu His Asn Asn Arg Ile Gln His Val Gly Thr His Ser	215	220	225	908
ttc gag ggg ctg cac aat ctg gag aca cta gac ctg aac tat aat gag Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn Glu	230	235	240	956
ctg cag gag ttc ccc ttg gct atc cgg acc ctg ggc agg ctg cag gaa Leu Gln Glu Phe Pro Leu Ala Ile Arg Thr Leu Gly Arg Leu Gln Glu	250	255	260	1004
ttg ggt ttc cat aac aac atc aag gct atc cca gag aaa gcc ttc Leu Gly Phe His Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala Phe	265	270	275	1052

atg ggc aac cct ctc ctg cag aca ata cat ttt tat gac aac cca atc Met Gly Asn Pro Leu Leu Gln Thr Ile His Phe Tyr Asp Asn Pro Ile 280 285 290	1100
cag ttt gtg gga agg tca gca ttc cag tac ctg tct aaa ctg cat acg Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu Ser Lys Leu His Thr 295 300 305	1148
cta tct ttg aat ggt gcc act gat atc caa gag ttc cca gac ctc aaa Leu Ser Leu Asn Gly Ala Thr Asp Ile Gln Glu Phe Pro Asp Leu Lys 310 315 320 325	1196
ggc acc act agc ctg gag atc ctg acc ctg acc cgt gcg ggc atc aga Gly Thr Thr Ser Leu Glu Ile Leu Thr Leu Thr Arg Ala Gly Ile Arg 330 335 340	1244
ctg ctc cca ccg gga gtg tgc caa cag ctg cct agg ctc cga atc ctg Leu Leu Pro Pro Gly Val Cys Gln Gln Leu Pro Arg Leu Arg Ile Leu 345 350 355	1292
gag ctg tct cat aat cag atc gag gag tta ccc agc ctg cac aga tgt Glu Leu Ser His Asn Gln Ile Glu Glu Leu Pro Ser Leu His Arg Cys 360 365 370	1340
cag aag ctg gag gaa att ggc ctc cga cat aac agg atc aag gaa att Gln Lys Leu Glu Glu Ile Gly Leu Arg His Asn Arg Ile Lys Glu Ile 375 380 385	1388
ggt gca gat acc ttc agc cag ctg ggc tcc ttg caa gct tta gac ctg Gly Ala Asp Thr Phe Ser Gln Leu Gly Ser Leu Gln Ala Leu Asp Leu 390 395 400 405	1436
agt tgg aat gcc atc cgt gcc atc cac cct gag gct ttc tca acc ctt Ser Trp Asn Ala Ile Arg Ala Ile His Pro Glu Ala Phe Ser Thr Leu 410 415 420	1484
cga tcc ttg gtt aag ctg gac ctg act gac aac cag ctg acc aca ctg Arg Ser Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr Leu 425 430 435	1532
ccc ctg gct ggg ctg gga ggc ctg atg cac ctg aag ctc aaa ggg aac Pro Leu Ala Gly Leu Gly Leu Met His Leu Lys Leu Lys Gly Asn 440 445 450	1580
ttg gcc ctg tct cag gcc ttc tcc aag gac agt ttc cca aaa ctg agg Leu Ala Leu Ser Gln Ala Phe Ser Lys Asp Ser Phe Pro Lys Leu Arg 455 460 465	1628
atc ctg gag gtg ccc tac gcc tac cag tgc tgt gcc tac ggc atc tgt Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys Ala Tyr Gly Ile Cys 470 475 480 485	1676
gcc agc ttc ttc aag acc tct ggg cag tgg cag gcc gag gac ttt cat Ala Ser Phe Phe Lys Thr Ser Gly Gln Trp Gln Ala Glu Asp Phe His 490 495 500	1724
cca gaa gaa gag gag gca cca aag agg ccc ctg ggt ctc ctt gct gga	1772

Pro Glu Glu Glu Glu Ala Pro Lys Arg Pro Leu Gly Leu Leu Ala Gly			
505	510	515	
caa gct gag aac cac tat gac cta gac ctg gat gag ctc cag atg ggg			1820
Gln Ala Glu Asn His Tyr Asp Leu Asp Leu Asp Glu Leu Gln Met Gly			
520	525	530	
aca gag gac tca aag cca aac ccc agt gtc cag tgc agc cct gtt cca			1868
Thr Glu Asp Ser Lys Pro Asn Pro Ser Val Gln Cys Ser Pro Val Pro			
535	540	545	
ggc ccc ttc aag ccc tgc gag cac ctc ttt gag agc tgg ggc atc cgc			1916
Gly Pro Phe Lys Pro Cys Glu His Leu Phe Glu Ser Trp Gly Ile Arg			
550	555	560	565
ctt gct gtg tgg gcc atc gtg ctg ctc tcc gta ctc tgt aac ggg ctg			1964
Leu Ala Val Trp Ala Ile Val Leu Leu Ser Val Leu Cys Asn Gly Leu			
570	575	580	
gtg ctg ctg aca gtc ttt gcc agc gga ccc agc ccg ctg tcc ccc gtc			2012
Val Leu Leu Thr Val Phe Ala Ser Gly Pro Ser Pro Leu Ser Pro Val			
585	590	595	
aag ctt gtg gtg ggt gcg atg gca ggc gcc aac gcc ctg acg ggc att			2060
Lys Leu Val Val Gly Ala Met Ala Gly Ala Asn Ala Leu Thr Gly Ile			
600	605	610	
tcc tgt ggt ctc ctg gcc tct gtg gac gcc ttg acc tat ggt cag ttc			2108
Ser Cys Gly Leu Leu Ala Ser Val Asp Ala Leu Thr Tyr Gly Gln Phe			
615	620	625	
gct gag tat gga gcc cgc tgg gag agc ggt ctg ggc tgc cag gct acg			2156
Ala Glu Tyr Gly Ala Arg Trp Glu Ser Gly Leu Gly Cys Gln Ala Thr			
630	635	640	645
ggc ttc ctg gct gtc ctg ggt tca gag gcg tcg gtg ctg ctg ctc aca			2204
Gly Phe Leu Ala Val Leu Gly Ser Glu Ala Ser Val Leu Leu Leu Thr			
650	655	660	
ctg gcg gcc gtg cag tgc agc atc tct gtg acc tgc gtc cga gcc tac			2252
Leu Ala Ala Val Gln Cys Ser Ile Ser Val Thr Cys Val Arg Ala Tyr			
665	670	675	
ggg aag gcg ccg tcg cct ggc agc gtc cgc gca ggc gca ctg gga tgc			2300
Gly Lys Ala Pro Ser Pro Gly Ser Val Arg Ala Gly Ala Leu Gly Cys			
680	685	690	
ctg gcg ctg gcc ggg ctg gcc gca ctg ccg ctg gcc tcg gtg gga			2348
Leu Ala Leu Ala Gly Leu Ala Ala Leu Pro Leu Ala Ser Val Gly			
695	700	705	
gag tat ggc gcc tcc cca ctc tgc ctg ccc tac gcc cca ccc gag ggc			2396
Glu Tyr Gly Ala Ser Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu Gly			
710	715	720	725
cgg ccg gcc gcc ctg ggc ttc gct gta gcc ctg gtg atg atg aac tcg			2444
Arg Pro Ala Ala Leu Gly Phe Ala Val Ala Leu Val Met Met Asn Ser			

730	735	740	
ctc tgc ttc ctg gtg gcc ggc gcc tac atc aag ctc tac tgt gac Leu Cys Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys Asp 745	750	755	2492
ctg cca cgg ggt gac ttt gag gcc gtg tgg gac tgc gcc atg gtg cgc Leu Pro Arg Gly Asp Phe Glu Ala Val Trp Asp Cys Ala Met Val Arg 760	765	770	2540
cac gtg gcc tgg ctc atc ttt gca gat ggc ctc ctc tac tgc ccc gtg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro Val 775	780	785	2588
gcc ttc ctc agc ttt gcc tcc atg ctg ggc ctc ttc cct gtc acc ccc Ala Phe Leu Ser Phe Ala Ser Met Leu Gly Leu Phe Pro Val Thr Pro 790	795	800	2636
gag gct gtc aag tca gtc ctt ctg gtg gtg ctg cct ctg cct gcc tgc Glu Ala Val Lys Ser Val Leu Leu Val Val Leu Pro Leu Pro Ala Cys 810	815	820	2684
ctc aac cca ctg ctc tac ctg ctc ttc aac cct cac ttc cgg gat gac Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp Asp 825	830	835	2732
ctt cgg cgg ctc tgg cca agc cct cgg tcc cca ggg ccc cta gcc tac Leu Arg Arg Leu Trp Pro Ser Pro Arg Ser Pro Gly Pro Leu Ala Tyr 840	845	850	2780
gct gca gcc ggt gag ctg gag aag agc tcc tgc gac tcc acc caa gcg Ala Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln Ala 855	860	865	2828
ctg gtg gct ttc tca gat gtg gat ctt att ctg gaa gct tct gag gct Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu Ala 870	875	880	2876
ggg cag cct cct ggg cta gag acc tat ggc ttc cct tca gtg acc ctc Gly Gln Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu 890	895	900	2924
atc tcc cga cat cag ccg ggg gcc acc agg ctg gag gga aac cat ttt Ile Ser Arg His Gln Pro Gly Ala Thr Arg Leu Glu Gly Asn His Phe 905	910	915	2972
ata gag tct gat gga acc aag ttt ggg aac cca caa cct ccc atg aag Ile Glu Ser Asp Gly Thr Lys Phe Gly Asn Pro Gln Pro Pro Met Lys 920	925	930	3020
gga gaa ctg ctg aag gca gag gga gcc act ttg gca ggc tgt ggc Gly Glu Leu Leu Leu Lys Ala Glu Gly Ala Thr Leu Ala Gly Cys Gly 935	940	945	3068
tct tcc gtg ggt gga gcc ctc tgg ccc tct ggc tct ctc ttt gcc tct Ser Ser Val Gly Gly Ala Leu Trp Pro Ser Gly Ser Leu Phe Ala Ser 950	955	960	3116

cac ttg taaaatatccc tctctgtttg tcctctccccc atccaatgat ggctgcttat 3172  
His Leu

aaaagaaaaga caactccaac tccatagcaa gatggccaac acctctgact ccattgttct 3232  
ctctccacga cccctaacca atgagtgcctt ccaagtcttg ctgtgtcttg gccttcagct 3292  
tcactttcac cctggcctt ctctgtccaa tccaaatactt ctgacagagg cctggaaat 3352  
ttgcatagga gaaaggagaa aagaaaaaga cagtgaaggt tattgggccc tgacagagcc 3412  
atgatcagta agtgcagagt gatggggagg tctcacagag catgacactg gaagacaact 3472  
accaaagaca ttggagagtc tccccgtga catatagaat ataaaatgtg ttctgcgttc 3532  
cattaatctt gacctatgct gngccaaagt gcttcctgtt aaaatacact ttgaaagaca 3592  
ttgaaaaaaaaaaaaaaaaaaaaaaaaaaaaaggcgccgc 3637

<210> 2  
<211> 967  
<212> PRT  
<213> Mus musculus

<400> 2  
Met His Ser Pro Pro Gly Leu Leu Ala Leu Trp Leu Cys Ala Val Leu  
1 5 10 15  
Cys Ala Ser Ala Arg Gly Gly Ser Asp Pro Gln Pro Gly Pro Gly Arg  
20 25 30  
Pro Ala Cys Pro Ala Pro Cys His Cys Gln Glu Asp Gly Ile Met Leu  
35 40 45  
Ser Ala Asp Cys Ser Glu Leu Gly Leu Ser Val Val Pro Ala Asp Leu  
50 55 60  
Asp Pro Leu Thr Ala Tyr Leu Asp Leu Ser Met Asn Asn Leu Thr Glu  
65 70 75 80  
Leu Gln Pro Gly Leu Phe His His Leu Arg Phe Leu Glu Glu Leu Arg  
85 90 95  
Leu Ser Gly Asn His Leu Ser His Ile Pro Gly Gln Ala Phe Ser Gly  
100 105 110  
Leu His Ser Leu Lys Ile Leu Met Leu Gln Ser Asn Gln Leu Arg Gly  
115 120 125  
Ile Pro Ala Glu Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg  
130 135 140  
Leu Asp Ala Asn Leu Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly  
145 150 155 160

Leu Ser Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu  
165 170 175

Ile Pro Val Arg Ala Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr  
180 185 190

Leu Ala Leu Asn His Ile Arg His Ile Pro Asp Tyr Ala Phe Gln Asn  
195 200 205

Leu Thr Ser Leu Val Val Leu His Leu His Asn Asn Arg Ile Gln His  
210 215 220

Val Gly Thr His Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp  
225 230 235 240

Leu Asn Tyr Asn Glu Leu Gln Glu Phe Pro Leu Ala Ile Arg Thr Leu  
245 250 255

Gly Arg Leu Gln Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile  
260 265 270

Pro Glu Lys Ala Phe Met Gly Asn Pro Leu Leu Gln Thr Ile His Phe  
275 280 285

Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu  
290 295 300

Ser Lys Leu His Thr Leu Ser Leu Asn Gly Ala Thr Asp Ile Gln Glu  
305 310 315 320

Phe Pro Asp Leu Lys Gly Thr Thr Ser Leu Glu Ile Leu Thr Leu Thr  
325 330 335

Arg Ala Gly Ile Arg Leu Leu Pro Pro Gly Val Cys Gln Gln Leu Pro  
340 345 350

Arg Leu Arg Ile Leu Glu Leu Ser His Asn Gln Ile Glu Glu Leu Pro  
355 360 365

Ser Leu His Arg Cys Gln Lys Leu Glu Glu Ile Gly Leu Arg His Asn  
370 375 380

Arg Ile Lys Glu Ile Gly Ala Asp Thr Phe Ser Gln Leu Gly Ser Leu  
385 390 395 400

Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg Ala Ile His Pro Glu  
405 410 415

Ala Phe Ser Thr Leu Arg Ser Leu Val Lys Leu Asp Leu Thr Asp Asn  
420 425 430

Gln Leu Thr Thr Leu Pro Leu Ala Gly Leu Gly Gly Leu Met His Leu  
435 440 445

Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys Asp Ser  
450 455 460

Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys  
465 470 475 480

Ala Tyr Gly Ile Cys Ala Ser Phe Phe Lys Thr Ser Gly Gln Trp Gln  
485 490 495

Ala Glu Asp Phe His Pro Glu Glu Glu Ala Pro Lys Arg Pro Leu  
500 505 510

Gly Leu Leu Ala Gly Gln Ala Glu Asn His Tyr Asp Leu Asp Leu Asp  
515 520 525

Glu Leu Gln Met Gly Thr Glu Asp Ser Lys Pro Asn Pro Ser Val Gln  
530 535 540

Cys Ser Pro Val Pro Gly Pro Phe Lys Pro Cys Glu His Leu Phe Glu  
545 550 555 560

Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile Val Leu Leu Ser Val  
565 570 575

Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe Ala Ser Gly Pro Ser  
580 585 590

Pro Leu Ser Pro Val Lys Leu Val Val Gly Ala Met Ala Gly Ala Asn  
595 600 605

Ala Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala Ser Val Asp Ala Leu  
610 615 620

Thr Tyr Gly Gln Phe Ala Glu Tyr Gly Ala Arg Trp Glu Ser Gly Leu  
625 630 635 640

Gly Cys Gln Ala Thr Gly Phe Leu Ala Val Leu Gly Ser Glu Ala Ser  
645 650 655

Val Leu Leu Leu Thr Leu Ala Ala Val Gln Cys Ser Ile Ser Val Thr  
660 665 670

Cys Val Arg Ala Tyr Gly Lys Ala Pro Ser Pro Gly Ser Val Arg Ala  
675 680 685

Gly Ala Leu Gly Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala Leu Pro  
690 695 700

Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu Pro Tyr  
705 710 715 720

Ala Pro Pro Glu Gly Arg Pro Ala Ala Leu Gly Phe Ala Val Ala Leu  
725 730 735

Val Met Met Asn Ser Leu Cys Phe Leu Val Val Ala Gly Ala Tyr Ile  
740 745 750

Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe Glu Ala Val Trp Asp  
755 760 765

Cys Ala Met Val Arg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu  
 770 775 780

Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala Ser Met Leu Gly Leu  
 785 790 795 800

Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val Leu Leu Val Val Leu  
 805 810 815

Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro  
 820 825 830

His Phe Arg Asp Asp Leu Arg Arg Leu Trp Pro Ser Pro Arg Ser Pro  
 835 840 845

Gly Pro Leu Ala Tyr Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys  
 850 855 860

Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu  
 865 870 875 880

Glu Ala Ser Glu Ala Gly Gln Pro Pro Gly Leu Glu Thr Tyr Gly Phe  
 885 890 895

Pro Ser Val Thr Leu Ile Ser Arg His Gln Pro Gly Ala Thr Arg Leu  
 900 905 910

Glu Gly Asn His Phe Ile Glu Ser Asp Gly Thr Lys Phe Gly Asn Pro  
 915 920 925

Gln Pro Pro Met Lys Gly Glu Leu Leu Leu Lys Ala Glu Gly Ala Thr  
 930 935 940

Leu Ala Gly Cys Gly Ser Ser Val Gly Gly Ala Leu Trp Pro Ser Gly  
 945 950 955 960

Ser Leu Phe Ala Ser His Leu  
 965

<210> 3  
<211> 2901  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1)..(2901)

<400> 3  
atg cac agc ccg cct ggg ctc ctg gcg ctg tgg ctt tgc gct gtg ctg 48  
Met His Ser Pro Pro Gly Leu Leu Ala Leu Trp Leu Cys Ala Val Leu  
 1 5 10 15

tgc gca tcg gcg cgc ggg ggc agc gac ccc cag cct ggc ccg ggg cgt 96  
Cys Ala Ser Ala Arg Gly Gly Ser Asp Pro Gln Pro Gly Pro Gly Arg  
 20 25 30

ccc gcc tgc ccg gct ccc tgc cac tgc cag gag gac ggc atc atg ctg Pro Ala Cys Pro Ala Pro Cys His Cys Gln Glu Asp Gly Ile Met Leu	35	40	45	144
tcc gct gac tgc tcc gag ctc ggg ctc tca gtg gtg cct gcg gac ctg Ser Ala Asp Cys Ser Glu Leu Gly Leu Ser Val Val Pro Ala Asp Leu	50	55	60	192
gac ccc ctg acg gct tac cta gac ctc agt atg aac aac ctc acg gag Asp Pro Leu Thr Ala Tyr Leu Asp Leu Ser Met Asn Asn Leu Thr Glu	65	70	75	80
ctt cag ccg ggt ctc ttc cac cac ctg cgc ttc ctg gag gag ctg cgg Leu Gln Pro Gly Leu Phe His His Leu Arg Phe Leu Glu Glu Leu Arg	85	90	95	288
ctc tca ggg aac cac ctc tca cac atc ccg gga cag gca ttc tcc ggc Leu Ser Gly Asn His Leu Ser His Ile Pro Gly Gln Ala Phe Ser Gly	100	105	110	336
ctc cac agc ctc aaa att cta atg ctg cag agc aac cag ctc cgt ggg Leu His Ser Leu Lys Ile Leu Met Leu Gln Ser Asn Gln Leu Arg Gly	115	120	125	384
atc cca gca gag gca cta tgg gag ctg ccc agc ctg cag tcg ctg cgc Ile Pro Ala Glu Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg	130	135	140	432
cta gat gct aat ctc atc tcc ctg gtc cct gag aga agc ttt gag ggg Leu Asp Ala Asn Leu Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly	145	150	155	160
ctc tcc tcc ctc cgc cac ctc tgg ctg gat gac aat gca ctc act gag Leu Ser Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu	165	170	175	528
atc ccc gtc aga gct ctc aac aac ctt cct gcc cta cag gcc atg acc Ile Pro Val Arg Ala Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr	180	185	190	576
ttg gct ctc aac cat atc cgc cac atc cct gac tat gcc ttc cag aac Leu Ala Leu Asn His Ile Arg His Ile Pro Asp Tyr Ala Phe Gln Asn	195	200	205	624
ctc acc agt ctt gtg gtg ctg cat cta cat aac aac cgc atc cag cat Leu Thr Ser Leu Val Val Leu His Leu His Asn Arg Ile Gln His	210	215	220	672
gtg ggg acc cac agc ttc gag ggg ctg cac aat ctg gag aca cta gac Val Gly Thr His Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp	225	230	235	240
ctg aac tat aat gag ctg cag gag ttc ccc ttg gct atc cgg acc ctg Leu Asn Tyr Asn Glu Leu Gln Glu Phe Pro Leu Ala Ile Arg Thr Leu	245	250	255	720
				768

ggc agg ctg cag gaa ttg ggt ttc cat aac aac aac atc aag gct atc Gly Arg Leu Gln Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile 260 265 270	816
cca gag aaa gcc ttc atg ggc aac cct ctc ctg cag aca ata cat ttt Pro Glu Lys Ala Phe Met Gly Asn Pro Leu Leu Gln Thr Ile His Phe 275 280 285	864
tat gac aac cca atc cag ttt gtg gga agg tca gca ttc cag tac ctg Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu 290 295 300	912
tct aaa ctg cat acg cta tct ttg aat ggt gcc act gat atc caa gag Ser Lys Leu His Thr Leu Ser Leu Asn Gly Ala Thr Asp Ile Gln Glu 305 310 315 320	960
ttc cca gac ctc aaa ggc acc act agc ctg gag atc ctg acc ctg acc Phe Pro Asp Leu Lys Gly Thr Thr Ser Leu Glu Ile Leu Thr Leu Thr 325 330 335	1008
cgt gcg ggc atc aga ctg ctc cca ccg gga gtg tgc caa cag ctg cct Arg Ala Gly Ile Arg Leu Leu Pro Pro Gly Val Cys Gln Gln Leu Pro 340 345 350	1056
agg ctc cga atc ctg gag ctg tct cat aat cag atc gag gag tta ccc Arg Leu Arg Ile Leu Glu Leu Ser His Asn Gln Ile Glu Glu Leu Pro 355 360 365	1104
agc ctg cac aga tgt cag aag ctg gag gaa att ggc ctc cga cat aac Ser Leu His Arg Cys Gln Lys Leu Glu Glu Ile Gly Leu Arg His Asn 370 375 380	1152
agg atc aag gaa att ggt gca gat acc ttc agc cag ctg ggc tcc ttg Arg Ile Lys Glu Ile Gly Ala Asp Thr Phe Ser Gln Leu Gly Ser Leu 385 390 395 400	1200
caa gct tta gac ctg agt tgg aat gcc atc cgt gcc atc cac cct gag Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg Ala Ile His Pro Glu 405 410 415	1248
gct ttc tca acc ctt cga tcc ttg gtt aag ctg gac ctg act gac aac Ala Phe Ser Thr Leu Arg Ser Leu Val Lys Leu Asp Leu Thr Asp Asn 420 425 430	1296
cag ctg acc aca ctg ccc ctg gct ggg ctg gga ggc ctg atg cac ctg Gln Leu Thr Leu Pro Leu Ala Gly Leu Gly Gly Leu Met His Leu 435 440 445	1344
aag ctc aaa ggg aac ttg gcc ctg tct cag gcc ttc tcc aag gac agt Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys Asp Ser 450 455 460	1392
ttc cca aaa ctg agg atc ctg gag gtg ccc tac gcc tac cag tgc tgt Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys 465 470 475 480	1440
gcc tac ggc atc tgt gcc agc ttc ttc aag acc tct ggg cag tgg cag	1488

Ala Tyr Gly Ile Cys Ala Ser Phe Phe Lys Thr Ser Gly Gln Trp Gln			
485	490	495	
gcc gag gac ttt cat cca gaa gaa gag gag gca cca aag agg ccc ctg			1536
Ala Glu Asp Phe His Pro Glu Glu Glu Ala Pro Lys Arg Pro Leu			
500	505	510	
ggc ctc ctt gct gga caa gct gag aac cac tat gac cta gac ctg gat			1584
Gly Leu Leu Ala Gly Gln Ala Glu Asn His Tyr Asp Leu Asp Leu Asp			
515	520	525	
gag ctc cag atg ggg aca gag gac tca aag cca aac ccc agt gtc cag			1632
Glu Leu Gln Met Gly Thr Glu Asp Ser Lys Pro Asn Pro Ser Val Gln			
530	535	540	
tgc agc cct gtt cca ggc ccc ttc aag ccc tgc gag cac ctc ttt gag			1680
Cys Ser Pro Val Pro Gly Pro Phe Lys Pro Cys Glu His Leu Phe Glu			
545	550	555	560
agc tgg ggc atc cgc ctt gct gtg tgg gcc atc gtg ctg ctc tcc gta			1728
Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile Val Leu Leu Ser Val			
565	570	575	
ctc tgt aac ggg ctg gtg ctg ctg aca gtc ttt gcc agc gga ccc agc			1776
Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe Ala Ser Gly Pro Ser			
580	585	590	
ccg ctg tcc ccc gtc aag ctt gtg gtg ggt gcg atg gca ggc gcc aac			1824
Pro Leu Ser Pro Val Lys Leu Val Val Gly Ala Met Ala Gly Ala Asn			
595	600	605	
gcc ctg acg ggc att tcc tgt ggt ctc ctg gcc tct gtg gac gcc ttg			1872
Ala Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala Ser Val Asp Ala Leu			
610	615	620	
acc tat ggt cag ttc gct gag tat gga gcc cgc tgg gag agc ggt ctg			1920
Thr Tyr Gly Gln Phe Ala Glu Tyr Gly Ala Arg Trp Glu Ser Gly Leu			
625	630	635	640
ggc tgc cag gct acg ggc ttc ctg gct gtc ctg ggt tca gag gcg tcg			1968
Gly Cys Gln Ala Thr Gly Phe Leu Ala Val Leu Gly Ser Glu Ala Ser			
645	650	655	
gtg ctg ctg ctc aca ctg gcg gcc gtg cag tgc agc atc tct gtg acc			2016
Val Leu Leu Thr Leu Ala Ala Val Gln Cys Ser Ile Ser Val Thr			
660	665	670	
tgc gtc cga gcc tac ggg aag gcg ccg tcg cct ggc agc gtc cgc gca			2064
Cys Val Arg Ala Tyr Gly Lys Ala Pro Ser Pro Gly Ser Val Arg Ala			
675	680	685	
ggc gca ctg gga tgc ctg gcg ctg gcc ggg ctg gcc gca gca ctg ccg			2112
Gly Ala Leu Gly Cys Leu Ala Leu Ala Gly Leu Ala Ala Leu Pro			
690	695	700	
ctg gcc tcg gtg gga gag tat ggc gcc tcc cca ctc tgc ctg ccc tac			2160
Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu Pro Tyr			

705	710	715	720	
gcc cca ccc gag ggc cg <sup>g</sup> ccg gcc g <sup>c</sup> ctg g <sup>c</sup> ttc g <sup>c</sup> t gta g <sup>c</sup> c <sup>c</sup> ctg Ala Pro Pro Glu Gly Arg Pro Ala Ala Leu Gly Phe Ala Val Ala Leu				2208
725		730		735
gtg atg atg aac tcg ctc tgc ttc ctg gtg gtg g <sup>c</sup> g <sup>c</sup> g <sup>c</sup> tac atc Val Met Met Asn Ser Leu Cys Phe Leu Val Val Ala Gly Ala Tyr Ile				2256
740		745		750
aag ctc tac tgt gac ctg cca cg <sup>g</sup> g <sup>g</sup> t gac ttt gag g <sup>c</sup> gtg tgg gac Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe Glu Ala Val Trp Asp				2304
755		760		765
tgc gcc atg gtg cgc cac gtg g <sup>c</sup> tgg ctc atc ttt gca gat g <sup>c</sup> ctc Cys Ala Met Val Arg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu				2352
770		775		780
ctc tac tgc ccc gtg g <sup>c</sup> ttc ctc agc ttt g <sup>c</sup> tcc atg ctg g <sup>c</sup> ctc Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala Ser Met Leu Gly Leu				2400
785		790		795
ttc cct gtc acc ccc gag g <sup>c</sup> t gtc aag tca gtc ctt ctg gtg gtg ctg Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val Leu Leu Val Val Leu				2448
805		810		815
cct ctg cct gcc tgc ctc aac cca ctg ctc tac ctg ctc ttc aac cct Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro				2496
820		825		830
cac ttc cgg gat gac ctt cgg c <sup>g</sup> ctc tgg cca agc cct cgg tcc cca His Phe Arg Asp Asp Leu Arg Arg Leu Trp Pro Ser Pro Arg Ser Pro				2544
835		840		845
ggg ccc cta gcc tac g <sup>c</sup> t gca g <sup>c</sup> g <sup>g</sup> t gag ctg gag aag agc tcc tgc Gly Pro Leu Ala Tyr Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys				2592
850		855		860
gac tcc acc caa gc <sup>g</sup> ctg gtg g <sup>c</sup> t ttc tca gat gtg gat ctt att ctg Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu				2640
865		870		875
gaa gct tct gag g <sup>c</sup> t ggg cag cct cct ggg cta gag acc tat g <sup>c</sup> ttc Glu Ala Ser Glu Ala Gly Gln Pro Pro Gly Leu Glu Thr Tyr Gly Phe				2688
885		890		895
cct tca gtg acc ctc atc tcc cga cat cag cc <sup>g</sup> g <sup>g</sup> g <sup>c</sup> acc agg ctg Pro Ser Val Thr Leu Ile Ser Arg His Gln Pro Gly Ala Thr Arg Leu				2736
900		905		910
gag gga aac cat ttt ata gag tct gat gga acc aag ttt ggg aac cca Glu Gly Asn His Phe Ile Glu Ser Asp Gly Thr Lys Phe Gly Asn Pro				2784
915		920		925
caa cct ccc atg aag gga gaa ctg ctg aag gca gag gga g <sup>c</sup> act Gln Pro Pro Met Lys Gly Glu Leu Leu Lys Ala Glu Gly Ala Thr				2832
930		935		940

ttg gca ggc tgt ggc tct tcc gtg ggt gga gcc ctc tgg ccc tct ggc 2880  
 Leu Ala Gly Cys Gly Ser Ser Val Gly Gly Ala Leu Trp Pro Ser Gly  
 945 950 955 960  
 tct ctc ttt gcc tct cac ttg 2901  
 Ser Leu Phe Ala Ser His Leu  
 965

<210> 4  
 <211> 2486  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (2)..(1900)

<220>  
 <221> misc\_feature  
 <222> (172)  
 <223> n = any nucleotide

<400> 4 97  
 t aat acg act cac tat agg gaa agc tgg tac gcc tgc agg tac cggt tcc 49  
 Asn Thr Thr His Tyr Arg Glu Ser Trp Tyr Ala Cys Arg Tyr Arg Ser  
 1 5 10 15  
 gga att ccc ggg tcg acc cac gcg tcc gtg gag cgg agc cag ggt ctg 97  
 Gly Ile Pro Gly Ser Thr His Ala Ser Val Glu Arg Ser Gln Gly Leu  
 20 25 30  
 agc ctg ccg gct cat cca gcc tct ctt gct gcc cta gcg gcc tcc aac 145  
 Ser Leu Pro Ala His Pro Ala Ser Leu Ala Leu Ala Ala Ser Asn  
 35 40 45  
 aca acc gca tct ggg aaa ttg gag ctn gac acc ttc agc cag ctg agc 193  
 Thr Thr Ala Ser Gly Lys Leu Glu Xaa Asp Thr Phe Ser Gln Leu Ser  
 50 55 60  
 tcc ctg caa gcc ctg gat ctt agc tgg aac gcc atc cgg tcc atc cac 241  
 Ser Leu Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg Ser Ile His  
 65 70 75 80  
 cct gag gcc ttc tcc acc ctg cac tcc ctg gtc aag ctg gac ctg aca 289  
 Pro Glu Ala Phe Ser Thr Leu His Ser Leu Val Lys Leu Asp Leu Thr  
 85 90 95  
 gac aac cag ctg acc aca ctg ccc ctg gct gga ctt ggg ggc ttg atg 337  
 Asp Asn Gln Leu Thr Leu Pro Leu Ala Gly Leu Gly Leu Met  
 100 105 110  
 cat ctg aag ctc aaa ggg aac ctt gct ctc tcc cag gcc ttc tcc aag 385  
 His Leu Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys  
 115 120 125

gac agt ttc cca aaa ctg agg atc ctg gag gtg cct tat gcc tac cag Asp Ser Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln 130 135 140	433
tgc tgt ccc tat ggg atg tgt gcc agc ttc ttc aag gcc tct ggg cag Cys Cys Pro Tyr Gly Met Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln 145 150 155 160	481
tgg gag gct gaa gac ctt cac ctt gat gat gag gag tct tca aaa agg Trp Glu Ala Glu Asp Leu His Leu Asp Asp Glu Glu Ser Ser Lys Arg 165 170 175	529
ccc ctg ggc ctc ctt gcc aga caa gca gag aac cac tat gac cag gac Pro Leu Gly Leu Leu Ala Arg Gln Ala Glu Asn His Tyr Asp Gln Asp 180 185 190	577
ctg gat gag ctc cag ctg gag atg gag gac tca aag cca cac ccc agt Leu Asp Glu Leu Gln Leu Glu Met Glu Asp Ser Lys Pro His Pro Ser 195 200 205	625
gtc cag tgt agc cct act cca ggc ccc ttc aag ccc tgt gag tac ctc Val Gln Cys Ser Pro Thr Pro Gly Pro Phe Lys Pro Cys Glu Tyr Leu 210 215 220	673
ttt gaa agc tgg ggc atc cgc ctg gcc gtg tgg gcc atc gtg ttg ctc Phe Glu Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile Val Leu Leu 225 230 235 240	721
tcc gtg ctc tgc aat gga ctg gtg ctg ctg acc gtg ttc gct ggc ggg Ser Val Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe Ala Gly Gly 245 250 255	769
cct gcc ccc ctg ccc ccg gtc aag ttt gtg gta ggt gcg att gca ggc Pro Ala Pro Leu Pro Pro Val Lys Phe Val Val Gly Ala Ile Ala Gly 260 265 270	817
gcc aac acc ttg act ggc att tcc tgt ggc ctt cta gcc tca gtc gat Ala Asn Thr Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala Ser Val Asp 275 280 285	865
gcc ctg acc ttt ggt cag ttc tct gag tac gga gcc cgc tgg gag acg Ala Leu Thr Phe Gly Gln Phe Ser Glu Tyr Gly Ala Arg Trp Glu Thr 290 295 300	913
ggg cta ggc tgc cgg gcc act ggc ttc ctg gca gta ctt ggg tcg gag Gly Leu Gly Cys Arg Ala Thr Gly Phe Leu Ala Val Leu Gly Ser Glu 305 310 315 320	961
gca tcg gtg ctg ctc act ctg gcc gca gtg cag tgc agc gtc tcc Ala Ser Val Leu Leu Thr Leu Ala Ala Val Gln Cys Ser Val Ser 325 330 335	1009
gtc tcc tgt gtc cgg gcc tat ggg aag tcc ccc tcc ctg ggc agc gtt Val Ser Cys Val Arg Ala Tyr Gly Lys Ser Pro Ser Leu Gly Ser Val 340 345 350	1057
cga gca ggg gtc cta ggc tgc ctg gca ctg gca ggg ctg gcc gcc gca	1105

Arg Ala Gly Val Leu Gly Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala			
355	360	365	
ctg ccc ctg gcc tca gtg gga gaa tac ggg gcc tcc cca ctc tgc ctg			1153
Leu Pro Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu			
370	375	380	
ccc tac gcg cca cct gag ggt cag cca gca gcc ctg ggc ttc acc gtg			1201
Pro Tyr Ala Pro Pro Glu Gly Gln Pro Ala Ala Leu Gly Phe Thr Val			
385	390	395	400
gcc ctg gtg atg atg aac tcc ttc tgt ttc ctg gtc gtg gcc ggt gcc			1249
Ala Leu Val Met Met Asn Ser Phe Cys Phe Leu Val Val Ala Gly Ala			
405	410	415	
tac atc aaa ctg tac tgt gac ctg ccg cgg ggc gac ttt gag gcc gtg			1297
Tyr Ile Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe Glu Ala Val			
420	425	430	
tgg gac tgc gcc atg gtg agg cac gtg gcc tgg ctc atc ttc gca gac			1345
Trp Asp Cys Ala Met Val Arg His Val Ala Trp Leu Ile Phe Ala Asp			
435	440	445	
ggg ctc ctc tac tgt ccc gtg gcc ttc ctc agc ttc gcc tcc atg ctg			1393
Gly Leu Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala Ser Met Leu			
450	455	460	
ggc ctc ttc cct gtc acg ccc gag gcc gtc aag tct gtc ctg ctg gtg			1441
Gly Leu Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val Leu Leu Val			
465	470	475	480
gtg ctg ccc ctg cct gcc tgc ctc aac cca ctg ctg tac ctg ctc ttc			1489
Val Leu Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe			
485	490	495	
aac ccc cac ttc cgg gat gac ctt cgg cgg ctt cgg ccc cgc gca ggg			1537
Asn Pro His Phe Arg Asp Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly			
500	505	510	
gac tca ggg ccc cta gcc tat gct gcg gcc ggg gag ctg gag aag agc			1585
Asp Ser Gly Pro Leu Ala Tyr Ala Ala Gly Glu Leu Glu Lys Ser			
515	520	525	
tcc tgt gat tct acc cag gcc ctg gta gcc ttc tct gat gtg gat ctc			1633
Ser Cys Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp Val Asp Leu			
530	535	540	
att ctg gaa gct tct gaa gct ggg cgg ccc cct ggg ctg gag acc tat			1681
Ile Leu Glu Ala Ser Glu Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr			
545	550	555	560
ggc ttc ccc tca gtg acc ctc atc tcc tgt cag cag cca ggg gcc ccc			1729
Gly Phe Pro Ser Val Thr Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro			
565	570	575	
agg ctg gag ggc agc cat tgt gta gag cca gag ggg aac cac ttt ggg			1777
Arg Leu Glu Gly Ser His Cys Val Glu Pro Glu Gly Asn His Phe Gly			

580

585

590

aac ccc caa ccc tcc atg gat gga gaa ctg ctg ctg agg gca gag gga 1825  
Asn Pro Gln Pro Ser Met Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly  
595 600 605

```

tct acg cca gca ggt gga ggc ttg tca ggg ggt ggc ggc ttt cag ccc 1873
Ser Thr Pro Ala Gly Gly Gly Leu Ser Gly Gly Gly Gly Phe Gln Pro
          610           615           620

```

tct ggc ttg gcc ttt gct tca cac gtg taaatatccc tccccattct 1920  
Ser Gly Leu Ala Phe Ala Ser His Val  
625 630

tctctttcccc tctcttcact ttctctctc cccctcggtg aatgatggct gcttctaaaa 1980

caaatacaac caaaaactcag cagtgtgatc tatagcgaga tggcccgagta cctggctcca 2040

ctgatcacct ctctcctgtg accatcacca acgggtgcct cttggcctgg ctttcccttg 2100

gccttccat gttcacccat gatactgggc ctcttccttg tcatagtctga agctgtggac 2160

cagagacctg gacttttgtc tgcttaagggg aaatgaggga agtaaagaca gtgaagggggt 2220

ggagggttga tcagggcaca gtggacaggg agacacctaca gagaaaggcc tggaaagggtga 2280

tttccccgtgt gactcatgga taggatacaa aatgtgttcc atgtaccatt aatcttgaca 2340

tatgccatgc ataaagactt cctattaaaa taagctttgg aagagatcaa aaaaaaaaaaaa 2400

ttctatagtg tcacctaaat tcaatt 2486

<210> 5

<211> 633

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

222 (57)

<223> Xaa = any amino acid

<400> 5

Asn	Thr	Thr	His	Tyr	Arg	Glu	Ser	Trp	Tyr	Ala	Cys	Arg	Tyr	Arg	Ser
1				5					10					15	

Gly Ile Pro Gly Ser Thr His Ala Ser Val Glu Arg Ser Gln Gly Leu  
20 25 30

Ser Leu Pro Ala His Pro Ala Ser Leu Ala Ala Leu Ala Ala Ser Asn  
35 40 45

Thr Thr Ala Ser Gly Lys Leu Glu Xaa Asp Thr Phe Ser Gln Leu Ser  
50 55 60

Ser Leu Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg Ser Ile His  
65 70 75 80

Pro Glu Ala Phe Ser Thr Leu His Ser Leu Val Lys Leu Asp Leu Thr  
85 90 95

Asp Asn Gln Leu Thr Thr Leu Pro Leu Ala Gly Leu Gly Gly Leu Met  
100 105 110

His Leu Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys  
115 120 125

Asp Ser Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln  
130 135 140

Cys Cys Pro Tyr Gly Met Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln  
145 150 155 160

Trp Glu Ala Glu Asp Leu His Leu Asp Asp Glu Glu Ser Ser Lys Arg  
165 170 175

Pro Leu Gly Leu Leu Ala Arg Gln Ala Glu Asn His Tyr Asp Gln Asp  
180 185 190

Leu Asp Glu Leu Gln Leu Glu Met Glu Asp Ser Lys Pro His Pro Ser  
195 200 205

Val Gln Cys Ser Pro Thr Pro Gly Pro Phe Lys Pro Cys Glu Tyr Leu  
210 215 220

Phe Glu Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile Val Leu Leu  
225 230 235 240

Ser Val Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe Ala Gly Gly  
245 250 255

Pro Ala Pro Leu Pro Pro Val Lys Phe Val Val Gly Ala Ile Ala Gly  
260 265 270

Ala Asn Thr Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala Ser Val Asp  
275 280 285

Ala Leu Thr Phe Gly Gln Phe Ser Glu Tyr Gly Ala Arg Trp Glu Thr  
290 295 300

Gly Leu Gly Cys Arg Ala Thr Gly Phe Leu Ala Val Leu Gly Ser Glu  
305 310 315 320

Ala Ser Val Leu Leu Leu Thr Leu Ala Ala Val Gln Cys Ser Val Ser  
325 330 335

Val Ser Cys Val Arg Ala Tyr Gly Lys Ser Pro Ser Leu Gly Ser Val  
340 345 350

Arg Ala Gly Val Leu Gly Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala  
355 360 365

Leu Pro Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu  
370 375 380

Pro Tyr Ala Pro Pro Glu Gly Gln Pro Ala Ala Leu Gly Phe Thr Val  
385 390 395 400

Ala Leu Val Met Met Asn Ser Phe Cys Phe Leu Val Val Ala Gly Ala  
405 410 415

Tyr Ile Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe Glu Ala Val  
420 425 430

Trp Asp Cys Ala Met Val Arg His Val Ala Trp Leu Ile Phe Ala Asp  
435 440 445

Gly Leu Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala Ser Met Leu  
450 455 460

Gly Leu Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val Leu Leu Val  
465 470 475 480

Val Leu Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe  
485 490 495

Asn Pro His Phe Arg Asp Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly  
500 505 510

Asp Ser Gly Pro Leu Ala Tyr Ala Ala Gly Glu Leu Glu Lys Ser  
515 520 525

Ser Cys Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp Val Asp Leu  
530 535 540

Ile Leu Glu Ala Ser Glu Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr  
545 550 555 560

Gly Phe Pro Ser Val Thr Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro  
565 570 575

Arg Leu Glu Gly Ser His Cys Val Glu Pro Glu Gly Asn His Phe Gly  
580 585 590

Asn Pro Gln Pro Ser Met Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly  
595 600 605

Ser Thr Pro Ala Gly Gly Leu Ser Gly Gly Gly Phe Gln Pro  
610 615 620

Ser Gly Leu Ala Phe Ala Ser His Val  
625 630

<210> 6  
<211> 1899  
<212> DNA  
<213> Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(1899)

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (171)

&lt;223&gt; n = any nucleotide

&lt;400&gt; 6

aat acg act cac tat agg gaa agc tgg tac gcc tgc agg tac cgg tcc	48
Asn Thr Thr His Tyr Arg Glu Ser Trp Tyr Ala Cys Arg Tyr Arg Ser	
1 5 10 15	

gga att ccc ggg tcg acc cac gcg tcc gtg gag cgg agc cag ggt ctg	96
Gly Ile Pro Gly Ser Thr His Ala Ser Val Glu Arg Ser Gln Gly Leu	
20 25 30	

agc ctg ccg gct cat cca gcc tct ctt gct gcc cta gcg gcc tcc aac	144
Ser Leu Pro Ala His Pro Ala Ser Leu Ala Ala Leu Ala Ser Asn	
35 40 45	

aca acc gca tct ggg aaa ttg gag ctn gac acc ttc agc cag ctg agc	192
Thr Thr Ala Ser Gly Lys Leu Glu Xaa Asp Thr Phe Ser Gln Leu Ser	
50 55 60	

tcc ctg caa gcc ctg gat ctt agc tgg aac gcc atc cgg tcc atc cac	240
Ser Leu Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg Ser Ile His	
65 70 75 80	

cct gag gcc ttc tcc acc ctg cac tcc ctg gtc aag ctg gac ctg aca	288
Pro Glu Ala Phe Ser Thr Leu His Ser Leu Val Lys Leu Asp Leu Thr	
85 90 95	

gac aac cag ctg acc aca ctg ccc ctg gct gga ctt ggg ggc ttg atg	336
Asp Asn Gln Leu Thr Thr Leu Pro Leu Ala Gly Leu Gly Gly Leu Met	
100 105 110	

cat ctg aag ctc aaa ggg aac ctt gct ctc tcc cag gcc ttc tcc aag	384
His Leu Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys	
115 120 125	

gac agt ttc cca aaa ctg agg atc ctg gag gtg cct tat gcc tac cag	432
Asp Ser Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln	
130 135 140	

tgc tgt ccc tat ggg atg tgt gcc agc ttc ttc aag gcc tct ggg cag	480
Cys Cys Pro Tyr Gly Met Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln	
145 150 155 160	

tgg gag gct gaa gac ctt cac ctt gat gat gag gag tct tca aaa agg	528
Trp Glu Ala Glu Asp Leu His Leu Asp Asp Glu Glu Ser Ser Lys Arg	
165 170 175	

ccc ctg ggc ctc ctt gcc aga caa gca gag aac cac tat gac cag gac	576
Pro Leu Gly Leu Leu Ala Arg Gln Ala Glu Asn His Tyr Asp Gln Asp	

180	185	190	
ctg gat gag ctc cag ctg gag atg gag gac tca aag cca cac ccc agt Leu Asp Glu Leu Gln Leu Glu Met Glu Asp Ser Lys Pro His Pro Ser 195	200	205	624
gtc cag tgt agc cct act cca ggc ccc ttc aag ccc tgt gag tac ctc Val Gln Cys Ser Pro Thr Pro Gly Pro Phe Lys Pro Cys Glu Tyr Leu 210	215	220	672
ttt gaa agc tgg ggc atc cgc ctg gcc gtg tgg gcc atc gtg ttg ctc Phe Glu Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile Val Leu Leu 225	230	235	720
tcc gtg ctc tgc aat gga ctg gtg ctg acc gtg ttc gct ggc ggg Ser Val Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe Ala Gly Gly 245	250	255	768
cct gcc ccc ctg ccc ccg gtc aag ttt gtg gta ggt gcg att gca ggc Pro Ala Pro Leu Pro Pro Val Lys Phe Val Val Gly Ala Ile Ala Gly 260	265	270	816
gcc aac acc ttg act ggc att tcc tgt ggc ctt cta gcc tca gtc gat Ala Asn Thr Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala Ser Val Asp 275	280	285	864
gcc ctg acc ttt ggt cag ttc tct gag tac gac gga gcc cgc tgg gag acg Ala Leu Thr Phe Gly Gln Phe Ser Glu Tyr Gly Ala Arg Trp Glu Thr 290	295	300	912
ggg cta ggc tgc cgg gcc act ggc ttc ctg gca gta ctt ggg tcg gag Gly Leu Gly Cys Arg Ala Thr Gly Phe Leu Ala Val Leu Gly Ser Glu 305	310	315	960
gca tcg gtg ctg ctg ctc act ctg gcc gca gtg cag tgc agc gtc tcc Ala Ser Val Leu Leu Thr Leu Ala Ala Val Gln Cys Ser Val Ser 325	330	335	1008
gtc tcc tgt gtc cgg gcc tat ggg aag tcc ccc tcc ctg ggc agc gtt Val Ser Cys Val Arg Ala Tyr Gly Lys Ser Pro Ser Leu Gly Ser Val 340	345	350	1056
cga gca ggg gtc cta ggc tgc ctg gca ctg gca ggg ctg gcc gcc gca Arg Ala Gly Val Leu Gly Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala 355	360	365	1104
ctg ccc ctg gcc tca gtg gga gaa tac ggg gcc tcc cca ctc tgc ctg Leu Pro Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu 370	375	380	1152
ccc tac gcg cca cct gag ggt cag cca gca gcc ctg ggc ttc acc gtg Pro Tyr Ala Pro Pro Glu Gly Gln Pro Ala Ala Leu Gly Phe Thr Val 385	390	395	1200
gcc ctg gtg atg aac tcc ttc tgt ttc ctg gtc gtg gcc ggt gcc Ala Leu Val Met Met Asn Ser Phe Cys Phe Leu Val Val Ala Gly Ala 405	410	415	1248

tac atc aaa ctg tac tgt gac ctg ccg cgg ggc gac ttt qag gcc gtg Tyr Ile Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe Glu Ala Val 420 425 430	1296
tgg gac tgc gcc atg gtg agg cac gtg gcc tgg ctc atc ttc gca gac Trp Asp Cys Ala Met Val Arg His Val Ala Trp Leu Ile Phe Ala Asp 435 440 445	1344
ggg ctc ctc tac tgt ccc gtg gcc ttc ctc agc ttc gcc tcc atg ctg Gly Leu Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala Ser Met Leu 450 455 460	1392
ggc ctc ttc cct gtc acg ccc gag gcc gtc aag tct gtc ctg ctg gtg Gly Leu Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val Leu Leu Val 465 470 475 480	1440
gtg ctg ccc ctc cct gcc tgc ctc aac cca ctg ctg tac ctg ctc ttc Val Leu Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe 485 490 495	1488
aac ccc cac ttc cgg gat gac ctt cgg cgg ctt cgg ccc cgc gca ggg Asn Pro His Phe Arg Asp Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly 500 505 510	1536
gac tca ggg ccc cta gcc tat gct gcg gcc ggg gag ctg gag aag agc Asp Ser Gly Pro Leu Ala Tyr Ala Ala Gly Glu Leu Glu Lys Ser 515 520 525	1584
tcc tgt gat tct acc cag gcc ctg gta gcc ttc tct gat gtg gat ctc Ser Cys Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp Val Asp Leu 530 535 540	1632
att ctg gaa gct tct gaa gct ggg cgg ccc cct ggg ctg gag acc tat Ile Leu Glu Ala Ser Glu Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr 545 550 555 560	1680
ggc ttc ccc tca gtg acc ctc atc tcc tgt cag cag cca ggg gcc ccc Gly Phe Pro Ser Val Thr Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro 565 570 575	1728
agg ctg gag ggc agc cat tgt gta gag cca gag ggg aac cac ttt ggg Arg Leu Glu Gly Ser His Cys Val Glu Pro Glu Gly Asn His Phe Gly 580 585 590	1776
aac ccc caa ccc tcc atg gat gga gaa ctg ctg ctg agg gca gag gga Asn Pro Gln Pro Ser Met Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly 595 600 605	1824
tct acg cca gca ggt gga ggc ttg tca ggg ggt ggc ggc ttt cag ccc Ser Thr Pro Ala Gly Gly Leu Ser Gly Gly Gly Phe Gln Pro 610 615 620	1872
tct ggc ttg gcc ttt gct tca cac gtg Ser Gly Leu Ala Phe Ala Ser His Val 625 630	1899

<210> 7  
<211> 2711  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)...(2208)

<pre> &lt;400&gt; 7 ggg ctg cac aat ctg gag aca cta gac ctg aat tat aac aag ctg cag Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn Lys Leu Gln       1           5           10          15  gag ttc cct gtg gcc atc cg acc ctg ggc aga ctg cag gaa ctg ggg Glu Phe Pro Val Ala Ile Arg Thr Leu Gly Arg Leu Gln Glu Leu Gly       20          25          30  ttc cat aac aac aac atc aag gcc atc cca gaa aag gcc ttc atg ggg Phe His Asn Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala Phe Met Gly       35          40          45  aac cct ctg cta cag acg ata cac ttt tat gat aac cca atc cag ttt Asn Pro Leu Leu Gln Thr Ile His Phe Tyr Asp Asn Pro Ile Gln Phe       50          55          60  gtg gga aga tcg gca ttc cag tac ctg cct aaa ctc cac aca cta tct Val Gly Arg Ser Ala Phe Gln Tyr Leu Pro Lys Leu His Thr Leu Ser       65          70          75          80  ctg aat ggt gcc atg gac atc cag gag ttt cca gat ctc aaa ggc acc Leu Asn Gly Ala Met Asp Ile Gln Glu Phe Pro Asp Leu Lys Gly Thr       85          90          95  acc agc ctg gag atc ctg acc ctg acc cgc gca ggc atc cgg ctg ctc Thr Ser Leu Glu Ile Leu Thr Leu Arg Ala Gly Ile Arg Leu Leu       100         105         110  cca tcg ggg atg tgc caa cag ctg ccc agg ctc cga gtc ctg gaa ctg Pro Ser Gly Met Cys Gln Gln Leu Pro Arg Leu Arg Val Leu Glu Leu       115         120         125  tct cac aat caa att gag gag ctg ccc agc ctg cac agg tgt cag aaa Ser His Asn Gln Ile Glu Glu Leu Pro Ser Leu His Arg Cys Gln Lys       130         135         140  ttg gag gaa atc ggc ctc caa cac aac cgc atc tgg gaa att gga gct Leu Glu Glu Ile Gly Leu Gln His Asn Arg Ile Trp Glu Ile Gly Ala       145         150         155         160  gac acc ttc agc cag ctg agc tcc ctg caa gcc ctg gat ctt agc tgg Asp Thr Phe Ser Gln Leu Ser Ser Leu Gln Ala Leu Asp Leu Ser Trp       165         170         175  aac gcc atc cgg tcc atc cac cct gag gcc ttc tcc acc ctg cac tcc Asn Ala Ile Arg Ser Ile His Pro Glu Ala Phe Ser Thr Leu His Ser       180         185         190 </pre>	48  96  144  192  240  288  336  384  432  480  528  576
--	--

180	185	190	
ctg gtc aag ctg gac ctg aca gac aac cag ctg acc aca ctg ccc ctg Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr Leu Pro Leu 195	200	205	624
gct gga ctt ggg ggc ttg atg cat ctg aag ctc aaa ggg aac ctt gct Ala Gly Leu Gly Leu Met His Leu Lys Leu Lys Gly Asn Leu Ala 210	215	220	672
ctc tcc cag gcc ttc tcc aag gac agt ttc cca aaa ctg agg atc ctg Leu Ser Gln Ala Phe Ser Lys Asp Ser Phe Pro Lys Leu Arg Ile Leu 225	230	235	720
gag gtg cct tat gcc tac cag tgc tgt ccc tat ggg atg tgt gcc agc Glu Val Pro Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met Cys Ala Ser 245	250	255	768
ttc ttc aag gcc tct ggg cag tgg gag gct gaa gac ctt cac ctt gat Phe Phe Lys Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu His Leu Asp 260	265	270	816
gat gag gag tct tca aaa agg ccc ctg ggc ctc ctt gcc aga caa gca Asp Glu Glu Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala Arg Gln Ala 275	280	285	864
gag aac cac tat gac cag gac ctg gat gag ctc cag ctg gag atg gag Glu Asn His Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu Glu Met Glu 290	295	300	912
gac tca aag cca cac ccc agt gtc cag tgt agc cct act cca ggc ccc Asp Ser Lys Pro His Pro Ser Val Gln Cys Ser Pro Thr Pro Gly Pro 305	310	315	960
ttc aag ccc tgt gag tac ctc ttt gaa agc tgg ggc atc cgc ctg gcc Phe Lys Pro Cys Glu Tyr Leu Phe Glu Ser Trp Gly Ile Arg Leu Ala 325	330	335	1008
gtg tgg gcc atc gtg ttg ctc tcc gtg ctc tgc aat gga ctg gtg ctg Val Trp Ala Ile Val Leu Leu Ser Val Leu Cys Asn Gly Leu Val Leu 340	345	350	1056
ctg acc gtg ttc gct ggc ggg cct gcc ccc ctg ccc cgg gtc aag ttt Leu Thr Val Phe Ala Gly Pro Ala Pro Leu Pro Pro Val Lys Phe 355	360	365	1104
gtg gta ggt gcg att gca ggc gcc aac acc ttg act ggc att tcc tgt Val Val Gly Ala Ile Ala Gly Ala Asn Thr Leu Thr Gly Ile Ser Cys 370	375	380	1152
ggc ctt cta gcc tca gtc gat gcc ctg acc ttt ggt cag ttc tct gag Gly Leu Leu Ala Ser Val Asp Ala Leu Thr Phe Gly Gln Phe Ser Glu 385	390	395	1200
tac gga gcc cgc tgg gag acg ggg cta ggc tgc cgg gcc act ggc ttc Tyr Gly Ala Arg Trp Glu Thr Gly Leu Gly Cys Arg Ala Thr Gly Phe 405	410	415	1248

ctg gca gta ctt ggg tcg gag gca tcg gtg ctg ctg act ctg gcc Leu Ala Val Leu Gly Ser Glu Ala Ser Val Leu Leu Leu Thr Leu Ala 420 425 430	1296
gca gtg cag tgc agc gtc tcc gtc tcc tgt gtc cgg gcc tat ggg aag Ala Val Gln Cys Ser Val Ser Cys Val Arg Ala Tyr Gly Lys 435 440 445	1344
tcc ccc tcc ctg ggc agc gtt cga gca ggg gtc cta ggc tgc ctg gca Ser Pro Ser Leu Gly Ser Val Arg Ala Gly Val Leu Gly Cys Leu Ala 450 455 460	1392
ctg gca ggg ctg gcc gca ctg ccc ctg gcc tca gtg gga gaa tac Leu Ala Gly Leu Ala Ala Leu Pro Leu Ala Ser Val Gly Glu Tyr 465 470 475 480	1440
ggg gcc tcc cca ctc tgc ctg ccc tac gcg cca cct gag ggt cag cca Gly Ala Ser Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu Gly Gln Pro 485 490 495	1488
gca gcc ctg ggc ttc acc gtg gcc ctg gtg atg atg aac tcc ttc tgt Ala Ala Leu Gly Phe Thr Val Ala Leu Val Met Met Asn Ser Phe Cys 500 505 510	1536
ttc ctg gtc gtg gcc ggt gcc tac atc aaa ctg tac tgt gac ctg ccg Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys Asp Leu Pro 515 520 525	1584
cgg ggc gac ttt gag gcc gtg tgg gac tgc gcc atg gtg agg cac gtg Arg Gly Asp Phe Glu Ala Val Trp Asp Cys Ala Met Val Arg His Val 530 535 540	1632
gcc tgg ctc atc ttc gca gac ggg ctc ctc tac tgt ccc gtg gcc ttc Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro Val Ala Phe 545 550 555 560	1680
ctc agc ttc gcc tcc atg ctg ggc ctc ttc cct gtc acg ccc gag gcc Leu Ser Phe Ala Ser Met Leu Gly Leu Phe Pro Val Thr Pro Glu Ala 565 570 575	1728
gtc aag tct gtc ctg ctg gtg ctg ccc ctg cct gcc tgc ctc aac Val Lys Ser Val Leu Leu Val Val Leu Pro Leu Pro Ala Cys Leu Asn 580 585 590	1776
cca ctg ctg tac ctg ctc ttc aac ccc cac ttc cgg gat gac ctt cgg Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp Asp Leu Arg 595 600 605	1824
cgg ctt cgg ccc cgc gca ggg gag tca ggg ccc cta gcc tat gct gcg Arg Leu Arg Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala Tyr Ala Ala 610 615 620	1872
gcc ggg gag ctg gag aag agc tcc tgt gat tct acc cag gcc ctg gta Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln Ala Leu Val 625 630 635 640	1920

gcc ttc tct gat gtg gat ctc att ctg gaa gct tct gaa gct ggg cg		1968	
Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu Ala Gly Arg			
645	650	655	
ccc cct ggg ctg gag acc tat ggc ttc ccc tca gtg acc otc atc tcc		2016	
Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu Ile Ser			
660	665	670	
tgt cag cag cca ggg gcc ccc agg ctg gag ggc agc cat tgt gta gag		2064	
Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His Cys Val Glu			
675	680	685	
cca gag ggg aac cac ttt ggg aac ccc caa ccc tcc atg gat gga gaa		2112	
Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met Asp Gly Glu			
690	695	700	
ctg ctg ctg agg gca gag gga tct acg cca gca ggt gga ggc ttg tca		2160	
Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly Leu Ser			
705	710	715	720
ggg ggt ggc ggc ttt cag ccc tct ggc ttg gcc ttt gct tca cac gtg		2208	
Gly Gly Gly Phe Gln Pro Ser Gly Leu Ala Phe Ala Ser His Val			
725	730	735	
taaatatccc tccccattct tctttcccc tctttccct ttccctctctc cccctcggtg		2268	
aatgatggct gtttctaaaa caaataacaac caaaaactcag cagtgtgatc tatagcagga		2328	
tggcccagta cctggctcca ctgatcacct ctctctgtg accatcacca acgggtgcct		2388	
cttggcctgg ctttcccttg gccttcctca gttcacctt gatactggc ctttccttg		2448	
tcatgtctga agctgtggac cagagacctg gactttgtc tgcttaaggaaatgaggga		2508	
agtaaagaca gtgaaggggt ggagggttga tcagggcaca gtggacaggg agacctcaca		2568	
gagaaaggcc tggaaaggta tttccctgt gactcatgga taggatacaa aatgtgttcc		2628	
atgtaccatt aatcttgaca tatgccatgc ataaagactt cctattaaaa taagcttgg		2688	
aagagattaa aaaaaaaaaaaa aaa		2711	

<210> 8  
<211> 736  
<212> PRT  
<213> Homo sapiens

<400> 8			
Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn Lys Leu Gln			
1	5	10	15
Glu Phe Pro Val Ala Ile Arg Thr Leu Gly Arg Leu Gln Glu Leu Gly			
20	25	30	
Phe His Asn Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala Phe Met Gly			
35	40	45	

Asn Pro Leu Leu Gln Thr Ile His Phe Tyr Asn Pro Ile Gln Phe  
50 55 60

Val Gly Arg Ser Ala Phe Gln Tyr Leu Pro Lys Leu His Thr Leu Ser  
65 70 75 80

Leu Asn Gly Ala Met Asp Ile Gln Glu Phe Pro Asp Leu Lys Gly Thr  
85 90 95

Thr Ser Leu Glu Ile Leu Thr Leu Thr Arg Ala Gly Ile Arg Leu Leu  
100 105 110

Pro Ser Gly Met Cys Gln Gln Leu Pro Arg Leu Arg Val Leu Glu Leu  
115 120 125

Ser His Asn Gln Ile Glu Glu Leu Pro Ser Leu His Arg Cys Gln Lys  
130 135 140

Leu Glu Glu Ile Gly Leu Gln His Asn Arg Ile Trp Glu Ile Gly Ala  
145 150 155 160

Asp Thr Phe Ser Gln Leu Ser Ser Leu Gln Ala Leu Asp Leu Ser Trp  
165 170 175

Asn Ala Ile Arg Ser Ile His Pro Glu Ala Phe Ser Thr Leu His Ser  
180 185 190

Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr Leu Pro Leu  
195 200 205

Ala Gly Leu Gly Gly Leu Met His Leu Lys Leu Lys Gly Asn Leu Ala  
210 215 220

Leu Ser Gln Ala Phe Ser Lys Asp Ser Phe Pro Lys Leu Arg Ile Leu  
225 230 235 240

Glu Val Pro Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met Cys Ala Ser  
245 250 255

Phe Phe Lys Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu His Leu Asp  
260 265 270

Asp Glu Glu Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala Arg Gln Ala  
275 280 285

Glu Asn His Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu Glu Met Glu  
290 295 300

Asp Ser Lys Pro His Pro Ser Val Gln Cys Ser Pro Thr Pro Gly Pro  
305 310 315 320

Phe Lys Pro Cys Glu Tyr Leu Phe Glu Ser Trp Gly Ile Arg Leu Ala  
325 330 335

Val Trp Ala Ile Val Leu Leu Ser Val Leu Cys Asn Gly Leu Val Leu  
340 345 350

Leu Thr Val Phe Ala Gly Gly Pro Ala Pro Leu Pro Pro Val Lys Phe  
355 360 365

Val Val Gly Ala Ile Ala Gly Ala Asn Thr Leu Thr Gly Ile Ser Cys  
370 375 380

Gly Leu Leu Ala Ser Val Asp Ala Leu Thr Phe Gly Gln Phe Ser Glu  
385 390 395 400

Tyr Gly Ala Arg Trp Glu Thr Gly Leu Gly Cys Arg Ala Thr Gly Phe  
405 410 415

Leu Ala Val Leu Gly Ser Glu Ala Ser Val Leu Leu Leu Thr Leu Ala  
420 425 430

Ala Val Gln Cys Ser Val Ser Val Ser Cys Val Arg Ala Tyr Gly Lys  
435 440 445

Ser Pro Ser Leu Gly Ser Val Arg Ala Gly Val Leu Gly Cys Leu Ala  
450 455 460

Leu Ala Gly Leu Ala Ala Ala Leu Pro Leu Ala Ser Val Gly Glu Tyr  
465 470 475 480

Gly Ala Ser Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu Gly Gln Pro  
485 490 495

Ala Ala Leu Gly Phe Thr Val Ala Leu Val Met Met Asn Ser Phe Cys  
500 505 510

Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys Asp Leu Pro  
515 520 525

Arg Gly Asp Phe Glu Ala Val Trp Asp Cys Ala Met Val Arg His Val  
530 535 540

Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro Val Ala Phe  
545 550 555 560

Leu Ser Phe Ala Ser Met Leu Gly Leu Phe Pro Val Thr Pro Glu Ala  
565 570 575

Val Lys Ser Val Leu Leu Val Val Leu Pro Leu Pro Ala Cys Leu Asn  
580 585 590

Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp Asp Leu Arg  
595 600 605

Arg Leu Arg Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala Tyr Ala Ala  
610 615 620

Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln Ala Leu Val  
625 630 635 640

Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu Ala Gly Arg  
645 650 655

Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu Ile Ser  
 660                    665                    670

Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His Cys Val Glu  
 675                    680                    685

Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met Asp Gly Glu  
 690                    695                    700

Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly Leu Ser  
 705                    710                    720

Gly Gly Gly Phe Gln Pro Ser Gly Leu Ala Phe Ala Ser His Val  
 725                    730                    735

<210> 9

<211> 2208

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(2208)

<400> 9

ggg	ctg	cac	aat	ctg	gag	aca	cta	gac	ctg	aat	tat	aac	aag	ctg	cag		48
Gly	Leu	His	Asn	Leu	Glu	Thr	Leu	Asp	Leu	Asn	Tyr	Asn	Lys	Leu	Gln		
1	5															15	

gag	tgc	cct	gtg	gcc	atc	cgg	acc	ctg	ggc	aga	ctg	cag	gaa	ctg	ggg		96
Glu	Phe	Pro	Val	Ala	Ile	Arg	Thr	Leu	Gly	Arg	Leu	Gln	Glu	Leu	Gly		
20	25															30	

ttc	cat	aac	aac	atc	aag	gcc	atc	cca	gaa	aag	gcc	ttc	atg	ggg		144
Phe	His	Asn	Asn	Ile	Lys	Ala	Ile	Pro	Glu	Lys	Ala	Phe	Met	Gly		
35	40														45	

aac	cct	ctg	cta	cag	acg	ata	cac	ttt	tat	gat	aac	cca	atc	cag	ttt		192
Asn	Pro	Leu	Leu	Gln	Thr	Ile	His	Phe	Tyr	Asp	Asn	Pro	Ile	Gln	Phe		
50															60		

gtg	gga	aga	tcg	gca	ttc	cag	tac	ctg	cct	aaa	ctc	cac	aca	cta	tct		240
Val	Gly	Arg	Ser	Ala	Phe	Gln	Tyr	Leu	Pro	Lys	Leu	His	Thr	Leu	Ser		
65	70														80		

ctg	aat	ggt	gcc	atg	gac	atc	cag	gag	ttt	cca	gat	ctc	aaa	ggc	acc		288
Leu	Asn	Gly	Ala	Met	Asp	Ile	Gln	Glu	Phe	Pro	Asp	Leu	Lys	Gly	Thr		
85															95		

acc	agc	ctg	gag	atc	ctg	acc	ctg	acc	cgc	gca	ggc	atc	cg	ctg	ctc		336
Thr	Ser	Leu	Glu	Ile	Leu	Thr	Leu	Thr	Arg	Ala	Gly	Ile	Arg	Leu	Leu		
100															110		

cca	tcg	ggg	atg	tgc	caa	cag	ctg	ccc	agg	ctc	cga	gtc	ctg	gaa	ctg		384
Pro	Ser	Gly	Met	Cys	Gln	Gln	Leu	Pro	Arg	Leu	Arg	Val	Leu	Glu	Leu		

115	120	125	
tct cac aat caa att gag gag ctg ccc agc ctg cac agg tgt cag aaa Ser His Asn Gln Ile Glu Glu Leu Pro Ser Leu His Arg Cys Gln Lys 130	135	140	432
ttg gag gaa atc ggc ctc caa cac aac cgc atc tgg gaa att gga gct Leu Glu Glu Ile Gly Leu Gln His Asn Arg Ile Trp Glu Ile Gly Ala 145	150	155	480
gac acc ttc agc cag ctg agc tcc ctg caa gcc ctg gat ctt agc tgg Asp Thr Phe Ser Gln Leu Ser Ser Leu Gln Ala Leu Asp Leu Ser Trp 165	170	175	528
aac gcc atc cgg tcc atc cac cct gag gcc ttc tcc acc ctg cac tcc Asn Ala Ile Arg Ser Ile His Pro Glu Ala Phe Ser Thr Leu His Ser 180	185	190	576
ctg gtc aag ctg gac ctg aca gac aac cag ctg acc aca ctg ccc ctg Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr Leu Pro Leu 195	200	205	624
gct gga ctt ggg ggc ttg atg cat ctg aag ctc aaa ggg aac ctt gct Ala Gly Leu Gly Leu Met His Leu Lys Leu Lys Gly Asn Leu Ala 210	215	220	672
ctc tcc cag gcc ttc tcc aag gac agt ttc cca aaa ctg agg atc ctg Leu Ser Gln Ala Phe Ser Lys Asp Ser Phe Pro Lys Leu Arg Ile Leu 225	230	235	720
gag gtg cct tat gcc tac cag tgc tgt ccc tat ggg atg tgt gcc agc Glu Val Pro Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met Cys Ala Ser 245	250	255	768
ttc ttc aag gcc tct ggg cag tgg gag gct gaa gac ctt cac ctt gat Phe Phe Lys Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu His Leu Asp 260	265	270	816
gat gag gag tct tca aaa agg ccc ctg ggc ctc ctt gcc aga caa gca Asp Glu Glu Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala Arg Gln Ala 275	280	285	864
gag aac cac tat gac cag gac ctg gat gag ctc cag ctg gag atg gag Glu Asn His Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu Glu Met Glu 290	295	300	912
gac tca aag cca cac ccc agt gtc cag tgt agc cct act cca ggc ccc Asp Ser Lys Pro His Pro Ser Val Gln Cys Ser Pro Thr Pro Gly Pro 305	310	315	960
ttc aag ccc tgt gag tac ctc ttt gaa agc tgg ggc atc cgc ctg gcc Phe Lys Pro Cys Glu Tyr Leu Phe Glu Ser Trp Gly Ile Arg Leu Ala 325	330	335	1008
gtg tgg gcc atc gtg ttg ctc tcc gtg ctc tgc aat gga ctg gtg ctg Val Trp Ala Ile Val Leu Leu Ser Val Leu Cys Asn Gly Leu Val Leu 340	345	350	1056

ctg acc gtg ttc gct ggc ggg cct gcc ccc ctg ccc ccg gtc aag ttt Leu Thr Val Phe Ala Gly Gly Pro Ala Pro Leu Pro Pro Val Lys Phe 355 360 365	1104
gtg gta ggt gcg att gca ggc gcc aac acc ttg act ggc att tcc tgt Val Val Gly Ala Ile Ala Gly Ala Asn Thr Leu Thr Gly Ile Ser Cys 370 375 380	1152
ggc ctt cta gcc tca gtc gat gcc ctg acc ttt ggt cag ttc tct gag Gly Leu Leu Ala Ser Val Asp Ala Leu Thr Phe Gly Gln Phe Ser Glu 385 390 395 400	1200
tac gga gcc cgc tgg gag acg ggg cta ggc tgc cgg gcc act ggc ttc Tyr Gly Ala Arg Trp Glu Thr Gly Leu Gly Cys Arg Ala Thr Gly Phe 405 410 415	1248
ctg gca gta ctt ggg tcg gag gca tcg gtg ctg ctg ctc act ctg gcc Leu Ala Val Leu Gly Ser Glu Ala Ser Val Leu Leu Leu Thr Leu Ala 420 425 430	1296
gca gtg cag tgc agc gtc tcc gtc tcc tgt gtc cgg gcc tat ggg aag Ala Val Gln Cys Ser Val Ser Cys Val Arg Ala Tyr Gly Lys 435 440 445	1344
tcc ccc tcc ctg ggc agc gtt cga gca ggg gtc cta ggc tgc ctg gca Ser Pro Ser Leu Gly Ser Val Arg Ala Gly Val Leu Gly Cys Leu Ala 450 455 460	1392
ctg gca ggg ctg gcc gca ctg ccc ctg gcc tca gtg gga gaa tac Leu Ala Gly Leu Ala Ala Leu Pro Leu Ala Ser Val Gly Glu Tyr 465 470 475 480	1440
ggg gcc tcc cca ctc tgc ctg ccc tac gcg cca cct gag ggt cag cca Gly Ala Ser Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu Gly Gln Pro 485 490 495	1488
gca gcc ctg ggc ttc acc gtg gcc ctg gtg atg atg aac tcc ttc tgt Ala Ala Leu Gly Phe Thr Val Ala Leu Val Met Met Asn Ser Phe Cys 500 505 510	1536
ttc ctg gtc gtg gcc ggt gcc tac atc aaa ctg tac tgt gac ctg ccg Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys Asp Leu Pro 515 520 525	1584
cgg ggc gac ttt gag gcc gtg tgg gac tgc gcc atg gtg agg cac gtg Arg Gly Asp Phe Glu Ala Val Trp Asp Cys Ala Met Val Arg His Val 530 535 540	1632
gcc tgg ctc atc ttc gca gac ggg ctc ctc tac tgt ccc gtg gcc ttc Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro Val Ala Phe 545 550 555 560	1680
ctc agc ttc gcc tcc atg ctg ggc ctc ttc cct gtc acg ccc gag gcc Leu Ser Phe Ala Ser Met Leu Gly Leu Phe Pro Val Thr Pro Glu Ala 565 570 575	1728

gtc aag tct gtc ctg ctg gtg ctg ccc ctg cct gcc tgc ctc aac		1776	
Val Lys Ser Val Leu Leu Val Val Leu Pro Leu Pro Ala Cys Leu Asn			
580	585	590	
cca ctg ctg tac ctg ctc ttc aac ccc cac ttc cgg gat gac ctt cgg		1824	
Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp Asp Leu Arg			
595	600	605	
cgg ctt cgg ccc cgc gca ggg gac tca ggg ccc cta gcc tat gct gcg		1872	
Arg Leu Arg Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala Tyr Ala Ala			
610	615	620	
gcc ggg gag ctg gag aag agc tcc tgt gat tct acc cag gcc ctg gta		1920	
Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln Ala Leu Val			
625	630	635	640
gcc ttc tct gat gtg gat ctc att ctg gaa gct tct gaa gct ggg cgg		1968	
Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu Ala Gly Arg			
645	650	655	
ccc cct ggg ctg gag acc tat ggc ttc ccc tca gtg acc ctc atc tcc		2016	
Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr Leu Ile Ser			
660	665	670	
tgt cag cag cca ggg gcc ccc agg ctg gag ggc agc cat tgt gta gag		2064	
Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His Cys Val Glu			
675	680	685	
cca gag ggg aac cac ttt ggg aac ccc caa ccc tcc atg gat gga gaa		2112	
Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met Asp Gly Glu			
690	695	700	
ctg ctg ctg agg gca gag gga tct acg cca gca ggt gga ggc ttg tca		2160	
Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly Leu Ser			
705	710	715	720
ggg ggt ggc ggc ttt cag ccc tct ggc ttg gcc ttt gct tca cac gtg		2208	
Gly Gly Gly Phe Gln Pro Ser Gly Leu Ala Phe Ala Ser His Val			
725	730	735	
<210> 10			
<211> 3492			
<212> DNA			
<213> Homo sapiens			
<220>			
<221> CDS			
<222> (104) ... (3004)			
<400> 10			
ccgccccggc tgcagccgc cgggaccggg aggcggcagc tgccggccacc gcggccgtgcg	60		
tccgcgcggc gccgcaggc gccccagtag cccgaccgc gag atg ccc agc ccg		115	
Met Pro Ser Pro			
1			
ccg ggg ctc cgg gcg cta tgg ctt tgc gcc gcg ctg tgc gct tcc cgg		163	

Pro Gly Leu Arg Ala Leu Trp Leu Cys Ala Ala Leu Cys Ala Ser Arg			
5	10	15	20
agg gcc ggc ggc gcc ccc cag ccc ggc ccg ggg ccc acc gcc tgc ccg			211
Arg Ala Gly Gly Ala Pro Gln Pro Gly Pro Gly Pro Thr Ala Cys Pro			
25	30	35	
gcc ccc tgc cac tgc cag gag gac ggc atc atg ctg tct gcc gac tgc			259
Ala Pro Cys His Cys Gln Glu Asp Gly Ile Met Leu Ser Ala Asp Cys			
40	45	50	
tct gag ctc ggg ctg tcc gcc gtt ccg ggg gac ctg gac ccc ctg acg			307
Ser Glu Leu Gly Leu Ser Ala Val Pro Gly Asp Leu Asp Pro Leu Thr			
55	60	65	
gct tac ctg gac ctc agc atg aac aac ctc aca gag ctt cag cct ggc			355
Ala Tyr Leu Asp Leu Ser Met Asn Asn Leu Thr Glu Leu Gln Pro Gly			
70	75	80	
ctc ttc cac cac ctg cgc ttc ttg gag gag ctg cgt ctc tct ggg aac			403
Leu Phe His His Leu Arg Phe Leu Glu Glu Leu Arg Leu Ser Gly Asn			
85	90	95	100
cat ctc tca cac atc cca gga caa gca ttc tct ggt ctc tac agc ctg			451
His Leu Ser His Ile Pro Gly Gln Ala Phe Ser Gly Leu Tyr Ser Leu			
105	110	115	
aaa atc ctg atg ctg cag aac aat cag ctg gga gga atc ccc gca gag			499
Lys Ile Leu Met Leu Gln Asn Asn Gln Leu Gly Gly Ile Pro Ala Glu			
120	125	130	
gcg ctg tgg gag ctg ccg agc ctg cag tcg ctg cgc cta gat gcc aac			547
Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg Leu Asp Ala Asn			
135	140	145	
ctc atc tcc ctg gtc ccg gag agg agc ttt gag ggg ctg tcc tcc ctc			595
Leu Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly Leu Ser Ser Leu			
150	155	160	
cgc cac ctc tgg ctg gac gac aat gca ctc acg gag atc cct gtc agg			643
Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu Ile Pro Val Arg			
165	170	175	180
gcc ctc aac aac ctc cct gcc ctg cag gcc atg acc ctg gcc ctc aac			691
Ala Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr Leu Ala Leu Asn			
185	190	195	
cgc atc agc cac atc ccc gac tac gcg ttc cag aat ctc acc agc ctt			739
Arg Ile Ser His Ile Pro Asp Tyr Ala Phe Gln Asn Leu Thr Ser Leu			
200	205	210	
gtg gtg ctg cat ttg cat aac aac cgc atc cag cat ctg ggg acc cac			787
Val Val Leu His Leu His Asn Asn Arg Ile Gln His Leu Gly Thr His			
215	220	225	
agc ttc gag ggg ctg cac aat ctg gag aca cta gac ctg aat tat aac			835
Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp Leu Asn Tyr Asn			

230	235	240	
aag ctg cag gag ttc cct gtg gcc atc cgg acc ctg ggc aga ctg cag Lys Leu Gln Glu Phe Pro Val Ala Ile Arg Thr Leu Gly Arg Leu Gln 245 250 255 260			883
gaa ctg ggg ttc cat aac aac aac atc aag gcc atc cca gaa aag gcc Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile Pro Glu Lys Ala 265 270 275			931
ttc atg ggg aac cct ctg cta cag acg ata cac ttt tat gat aac cca Phe Met Gly Asn Pro Leu Leu Gln Thr Ile His Phe Tyr Asp Asn Pro 280 285 290			979
atc cag ttt gtg gga aga tcg gca ttc cag tac ctg cct aaa ctc cac Ile Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu Pro Lys Leu His 295 300 305			1027
aca cta tct ctg aat ggt gcc atg gac atc cag gag ttt cca gat ctc Thr Leu Ser Leu Asn Gly Ala Met Asp Ile Gln Glu Phe Pro Asp Leu 310 315 320			1075
aaa ggc acc acc agc ctg gag atc ctg acc ctg acc cgc gca ggc atc Lys Gly Thr Thr Ser Leu Glu Ile Leu Thr Leu Thr Arg Ala Gly Ile 325 330 335 340			1123
cgg ctg ctc cca tcg ggg atg tgc caa cag ctg ccc agg ctc cga gtc Arg Leu Leu Pro Ser Gly Met Cys Gln Gln Leu Pro Arg Leu Arg Val 345 350 355			1171
ctg gaa ctg tct cac aat caa att gag gag ctg ccc agc ctg cac agg Leu Glu Leu Ser His Asn Gln Ile Glu Glu Leu Pro Ser Leu His Arg 360 365 370			1219
tgt cag aaa ttg gag gaa atc ggc ctc caa cac aac cgc atc tgg gaa Cys Gln Lys Leu Glu Glu Ile Gly Leu Gln His Asn Arg Ile Trp Glu 375 380 385			1267
att gga gct gac acc ttc agc cag ctg agc tcc ctg caa gcc ctg gat Ile Gly Ala Asp Thr Phe Ser Gln Leu Ser Ser Leu Gln Ala Leu Asp 390 395 400			1315
ctt agc tgg aac gcc atc cgg tcc atc cac cct gag gcc ttc tcc acc Leu Ser Trp Asn Ala Ile Arg Ser Ile His Pro Glu Ala Phe Ser Thr 405 410 415 420			1363
ctg cac tcc ctg gtc aag ctg gac ctg aca gac aac cag ctg acc aca Leu His Ser Leu Val Lys Leu Asp Leu Thr Asp Asn Gln Leu Thr Thr 425 430 435			1411
ctg ccc ctg gct gga ctt ggg ggc ttg atg cat ctg aag ctc aaa ggg Leu Pro Leu Ala Gly Leu Gly Gly Leu Met His Leu Lys Leu Lys Gly 440 445 450			1459
aac ctt gct ctc tcc cag gcc ttc tcc aag gac agt ttc cca aaa ctg Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys Asp Ser Phe Pro Lys Leu 455 460 465			1507

agg atc ctg gag gtg cct tat gcc tac cag tgc tgt ccc tat ggg atg Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys Pro Tyr Gly Met 470 475 480	1555
tgt gcc agc ttc ttc aag gcc tct ggg cag tgg gag gct gaa gac ctt Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln Trp Glu Ala Glu Asp Leu 485 490 495 500	1603
cac ctt gat gat gag gag tct tca aaa agg ccc ctg ggc ctc ctt gcc His Leu Asp Asp Glu Glu Ser Ser Lys Arg Pro Leu Gly Leu Leu Ala 505 510 515	1651
aga caa gca gag aac cac tat gac cag gac ctg gat gag ctc cag ctg Arg Gln Ala Glu Asn His Tyr Asp Gln Asp Leu Asp Glu Leu Gln Leu 520 525 530	1699
gag atg gag gac tca aag cca cac ccc agt gtc cag tgt agc cct act Glu Met Glu Asp Ser Lys Pro His Pro Ser Val Gln Cys Ser Pro Thr 535 540 545	1747
cca ggc ccc ttc aag ccc tgt gag tac ctc ttt gaa agc tgg ggc atc Pro Gly Pro Phe Lys Pro Cys Glu Tyr Leu Phe Glu Ser Trp Gly Ile 550 555 560	1795
cgc ctg gcc gtg tgg gcc atc gtg ttg ctc tcc gtg ctc tgc aat gga Arg Leu Ala Val Trp Ala Ile Val Leu Leu Ser Val Leu Cys Asn Gly 565 570 575 580	1843
ctg gtg ctg ctg acc gtg ttc gct ggc ggg cct gcc ccc ctg ccc ccg Leu Val Leu Leu Thr Val Phe Ala Gly Gly Pro Ala Pro Leu Pro Pro 585 590 595	1891
gtc aag ttt gtg gta ggt gcg att gca ggc gcc aac acc ttg act ggc Val Lys Phe Val Val Gly Ala Ile Ala Gly Ala Asn Thr Leu Thr Gly 600 605 610	1939
att tcc tgt ggc ctt cta gcc tca gtc gat gcc ctg acc ttt ggt cag Ile Ser Cys Gly Leu Leu Ala Ser Val Asp Ala Leu Thr Phe Gly Gln 615 620 625	1987
ttc tct gag tac gga gcc cgc tgg gag acg ggg cta ggc tgc cg <sup>g</sup> gcc Phe Ser Glu Tyr Gly Ala Arg Trp Glu Thr Gly Leu Gly Cys Arg Ala 630 635 640	2035
act ggc ttc ctg gca gta ctt ggg tcg gag gca tcg gtg ctg ctg ctc Thr Gly Phe Leu Ala Val Leu Gly Ser Glu Ala Ser Val Leu Leu Leu 645 650 655 660	2083
act ctg gcc gca gtg cag tgc agc gtc tcc gtc tcc tgt gtc cg <sup>g</sup> gcc Thr Leu Ala Ala Val Gln Cys Ser Val Ser Val Ser Cys Val Arg Ala 665 670 675	2131
tat ggg aag tcc ccc tcc ctg ggc agc gtt cga gca ggg gtc cta ggc Tyr Gly Lys Ser Pro Ser Leu Gly Ser Val Arg Ala Gly Val Leu Gly 680 685 690	2179

tgc ctg gca ctg gca ggg ctg gcc gcc gca ctg ccc ctg gcc tca gtg Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala Leu Pro Leu Ala Ser Val 695 700 705	2227
gga gaa tac ggg gcc tcc cca ctc tgc ctg ccc tac gcg cca cct gag Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu Pro Tyr Ala Pro Pro Glu 710 715 720	2275
ggt cag cca gca gcc ctg ggc ttc acc gtg gcc ctg gtg atg atg aac Gly Gln Pro Ala Ala Leu Gly Phe Thr Val Ala Leu Val Met Met Asn 725 730 735 740	2323
tcc ttc tgt ttc ctg gtc gtg gcc ggt gcc tac atc aaa ctg tac tgt Ser Phe Cys Phe Leu Val Val Ala Gly Ala Tyr Ile Lys Leu Tyr Cys 745 750 755	2371
gac ctg ccg cgg ggc gac ttt gag gcc gtg tgg gac tgc gcc atg gtg Asp Leu Pro Arg Gly Asp Phe Glu Ala Val Trp Asp Cys Ala Met Val 760 765 770	2419
agg cac gtg gcc tgg ctc atc ttc gca gac ggg ctc ctc tac tgt ccc Arg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu Leu Tyr Cys Pro 775 780 785	2467
gtg gcc ttc ctc agc ttc gcc tcc atg ctg ggc ctc ttc cct gtc acg Val Ala Phe Leu Ser Phe Ala Ser Met Leu Gly Leu Phe Pro Val Thr 790 795 800	2515
ccc gag gcc gtc aag tct gtc ctg ctg gtg ctg ccc ctg cct gcc Pro Glu Ala Val Lys Ser Val Leu Leu Val Val Leu Pro Leu Pro Ala 805 810 815 820	2563
tgc ctc aac cca ctg ctg tac ctg ctc ttc aac ccc cac ttc cgg gat Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro His Phe Arg Asp 825 830 835	2611
gac ctt cgg cgg ctt cgg ccc cgc gca ggg gac tca ggg ccc cta gcc Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly Asp Ser Gly Pro Leu Ala 840 845 850	2659
tat gct gcg gcc ggg gag ctg gag aag agc tcc tgt gat tct acc cag Tyr Ala Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys Asp Ser Thr Gln 855 860 865	2707
gcc ctg gta gcc ttc tct gat gtg gat ctc att ctg gaa gct tct gaa Ala Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu Glu Ala Ser Glu 870 875 880	2755
gct ggg cgg ccc cct ggg ctg gag acc tat ggc ttc ccc tca gtg acc Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr Gly Phe Pro Ser Val Thr 885 890 895 900	2803
ctc atc tcc tgt cag cag cca ggg gcc ccc agg ctg gag ggc agc cat Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro Arg Leu Glu Gly Ser His 905 910 915	2851
tgt gta gag cca gag ggg aac cac ttt ggg aac ccc caa ccc tcc atg	2899

Cys Val Glu Pro Glu Gly Asn His Phe Gly Asn Pro Gln Pro Ser Met			
920	925	930	
gat gga gaa ctg ctg ctg agg gca gag gga tct acg cca gca ggt gga 2947			
Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly Ser Thr Pro Ala Gly Gly			
935	940	945	
ggc ttg tca ggg ggt ggc ggc ttt cag ccc tct ggc ttg gcc ttt gct 2995			
Gly Leu Ser Gly Gly Phe Gln Pro Ser Gly Leu Ala Phe Ala			
950	955	960	
tca cac gtg taaatatccc tccccattct tctttttttt tttttttttt 3044			
Ser His Val			
965			
ttccttccttc cccctcggtg aatgatggct gcttctaaaa caaatacaac caaaaactcag 3104			
cagtgtgatc tatagcagga tggcccagta cctggctcca ctgatcacct ctctcctgtg 3164			
accatcacca acgggtgcct cttggcctgg ctttcccttg gccttcctca gcttcacctt 3224			
gatactgggc ctcttccttg tcatgtctga agctgtggac caragacctg gactttgtc 3284			
tgcttaaggg aaatgaggga agtaaagaca gtgaagggggt ggagggttga tcagggcaca 3344			
gtggacaggg agacctcaca raaaaaggcc tggaaggkga tttccctgtt gactcatggr 3404			
taggawacaa aatgtgttcc atgtaccatt aatcttgaca tatgccatgc ataaaractt 3464			
cctattaaaa taagctttgg ragagatt 3492			
<210> 11			
<211> 967			
<212> PRT			
<213> Homo sapiens			
<400> 11			
Met Pro Ser Pro Pro Gly Leu Arg Ala Leu Trp Leu Cys Ala Ala Leu			
1	5	10	15
Cys Ala Ser Arg Arg Ala Gly Gly Ala Pro Gln Pro Gly Pro			
20	25	30	
Thr Ala Cys Pro Ala Pro Cys His Cys Gln Glu Asp Gly Ile Met Leu			
35	40	45	
Ser Ala Asp Cys Ser Glu Leu Gly Leu Ser Ala Val Pro Gly Asp Leu			
50	55	60	
Asp Pro Leu Thr Ala Tyr Leu Asp Leu Ser Met Asn Asn Leu Thr Glu			
65	70	75	80
Leu Gln Pro Gly Leu Phe His His Leu Arg Phe Leu Glu Glu Leu Arg			
85	90	95	
Leu Ser Gly Asn His Leu Ser His Ile Pro Gly Gln Ala Phe Ser Gly			
100	105	110	

Leu Tyr Ser Leu Lys Ile Leu Met Leu Gln Asn Asn Gln Leu Gly Gly  
115 120 125

Ile Pro Ala Glu Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg  
130 135 140

Leu Asp Ala Asn Leu Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly  
145 150 155 160

Leu Ser Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu  
165 170 175

Ile Pro Val Arg Ala Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr  
180 185 190

Leu Ala Leu Asn Arg Ile Ser His Ile Pro Asp Tyr Ala Phe Gln Asn  
195 200 205

Leu Thr Ser Leu Val Val Leu His Leu His Asn Asn Arg Ile Gln His  
210 215 220

Leu Gly Thr His Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp  
225 230 235 240

Leu Asn Tyr Asn Lys Leu Gln Glu Phe Pro Val Ala Ile Arg Thr Leu  
245 250 255

Gly Arg Leu Gln Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile  
260 265 270

Pro Glu Lys Ala Phe Met Gly Asn Pro Leu Leu Gln Thr Ile His Phe  
275 280 285

Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu  
290 295 300

Pro Lys Leu His Thr Leu Ser Leu Asn Gly Ala Met Asp Ile Gln Glu  
305 310 315 320

Phe Pro Asp Leu Lys Gly Thr Thr Ser Leu Glu Ile Leu Thr Leu Thr  
325 330 335

Arg Ala Gly Ile Arg Leu Leu Pro Ser Gly Met Cys Gln Gln Leu Pro  
340 345 350

Arg Leu Arg Val Leu Glu Leu Ser His Asn Gln Ile Glu Glu Leu Pro  
355 360 365

Ser Leu His Arg Cys Gln Lys Leu Glu Glu Ile Gly Leu Gln His Asn  
370 375 380

Arg Ile Trp Glu Ile Gly Ala Asp Thr Phe Ser Gln Leu Ser Ser Leu  
385 390 395 400

Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg Ser Ile His Pro Glu  
405 410 415

Ala Phe Ser Thr Leu His Ser Leu Val Lys Leu Asp Leu Thr Asp Asn  
420 425 430

Gln Leu Thr Thr Leu Pro Leu Ala Gly Leu Gly Gly Leu Met His Leu  
435 440 445

Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys Asp Ser  
450 455 460

Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys  
465 470 475 480

Pro Tyr Gly Met Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln Trp Glu  
485 490 495

Ala Glu Asp Leu His Leu Asp Asp Glu Glu Ser Ser Lys Arg Pro Leu  
500 505 510

Gly Leu Leu Ala Arg Gln Ala Glu Asn His Tyr Asp Gln Asp Leu Asp  
515 520 525

Glu Leu Gln Leu Glu Met Glu Asp Ser Lys Pro His Pro Ser Val Gln  
530 535 540

Cys Ser Pro Thr Pro Gly Pro Phe Lys Pro Cys Glu Tyr Leu Phe Glu  
545 550 555 560

Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile Val Leu Leu Ser Val  
565 570 575

Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe Ala Gly Pro Ala  
580 585 590

Pro Leu Pro Pro Val Lys Phe Val Val Gly Ala Ile Ala Gly Ala Asn  
595 600 605

Thr Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala Ser Val Asp Ala Leu  
610 615 620

Thr Phe Gly Gln Phe Ser Glu Tyr Gly Ala Arg Trp Glu Thr Gly Leu  
625 630 635 640

Gly Cys Arg Ala Thr Gly Phe Leu Ala Val Leu Gly Ser Glu Ala Ser  
645 650 655

Val Leu Leu Leu Thr Leu Ala Ala Val Gln Cys Ser Val Ser Val Ser  
660 665 670

Cys Val Arg Ala Tyr Gly Lys Ser Pro Ser Leu Gly Ser Val Arg Ala  
675 680 685

Gly Val Leu Gly Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala Leu Pro  
690 695 700

Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu Pro Tyr  
705 710 715 720

Ala Pro Pro Glu Gly Gln Pro Ala Ala Leu Gly Phe Thr Val Ala Leu  
725 730 735

Val Met Met Asn Ser Phe Cys Phe Leu Val Val Ala Gly Ala Tyr Ile  
740 745 750

Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe Glu Ala Val Trp Asp  
755 760 765

Cys Ala Met Val Arg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu  
770 775 780

Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala Ser Met Leu Gly Leu  
785 790 795 800

Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val Leu Leu Val Val Leu  
805 810 815

Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro  
820 825 830

His Phe Arg Asp Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly Asp Ser  
835 840 845

Gly Pro Leu Ala Tyr Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys  
850 855 860

Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu  
865 870 875 880

Glu Ala Ser Glu Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr Gly Phe  
885 890 895

Pro Ser Val Thr Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro Arg Leu  
900 905 910

Glu Gly Ser His Cys Val Glu Pro Glu Gly Asn His Phe Gly Asn Pro  
915 920 925

Gln Pro Ser Met Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly Ser Thr  
930 935 940

Pro Ala Gly Gly Leu Ser Gly Gly Phe Gln Pro Ser Gly  
945 950 955 960

Leu Ala Phe Ala Ser His Val  
965

<210> 12  
<211> 2901  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)...(2901)

<400> 12  
atg ccc agc ccg ccg ggg ctc cg<sup>g</sup> g<sup>c</sup> cta tgg ctt tgc gcc g<sup>c</sup> ctg 48  
Met Pro Ser Pro Pro Gly Leu Arg Ala Leu Trp Leu Cys Ala Ala Leu  
1 5 10 15

tgc gct tcc cg<sup>g</sup> agg g<sup>c</sup> c<sup>c</sup> g<sup>g</sup> c<sup>g</sup> c<sup>c</sup> c<sup>g</sup> g<sup>g</sup> c<sup>g</sup> g<sup>g</sup> c<sup>c</sup> 96  
Cys Ala Ser Arg Arg Ala Gly Gly Ala Pro Gln Pro Gly Pro Gly Pro  
20 25 30

acc gcc tgc ccg gcc ccc tgc cac tgc cag gag gac g<sup>c</sup> atc atg ctg 144  
Thr Ala Cys Pro Ala Pro Cys His Cys Gln Glu Asp Gly Ile Met Leu  
35 40 45

tct gcc gac tgc tct gag ctc ggg ctg tcc gcc gtt cc<sup>g</sup> g<sup>g</sup> gac ctg 192  
Ser Ala Asp Cys Ser Glu Leu Gly Leu Ser Ala Val Pro Gly Asp Leu  
50 55 60

gac ccc ctg acg gct tac ctg gac ctc agc atg aac aac ctc aca gag 240  
Asp Pro Leu Thr Ala Tyr Leu Asp Leu Ser Met Asn Asn Leu Thr Glu  
65 70 75 80

ctt cag cct ggc ctc ttc cac cac ctg cgc ttc ttg gag gag ctg cgt 288  
Leu Gln Pro Gly Leu Phe His His Leu Arg Phe Leu Glu Glu Leu Arg  
85 90 95

ctc tct ggg aac cat ctc tca cac atc cca gga caa gca ttc tct ggt 336  
Leu Ser Gly Asn His Leu Ser His Ile Pro Gly Gln Ala Phe Ser Gly  
100 105 110

ctc tac agc ctg aaa atc ctg atg ctg cag aac aat cag ctg gga gga 384  
Leu Tyr Ser Leu Lys Ile Leu Met Leu Gln Asn Asn Gln Leu Gly Gly  
115 120 125

atc ccc gca gag g<sup>c</sup> ctg tgg gag ctg cc<sup>g</sup> agc ctg cag tc<sup>g</sup> ctg cgc 432  
Ile Pro Ala Glu Ala Leu Trp Glu Leu Pro Ser Leu Gln Ser Leu Arg  
130 135 140

cta gat gcc aac ctc atc tcc ctg gtc cc<sup>g</sup> gag agg agc ttt gag ggg 480  
Leu Asp Ala Asn Leu Ile Ser Leu Val Pro Glu Arg Ser Phe Glu Gly  
145 150 155 160

ctg tcc tcc ctc cgc cac ctc tgg ctg gac gac aat gca ctc acg gag 528  
Leu Ser Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu  
165 170 175

atc cct gtc agg gcc ctc aac aac ctc cct gcc ctg cag gcc atg acc 576  
Ile Pro Val Arg Ala Leu Asn Asn Leu Pro Ala Leu Gln Ala Met Thr  
180 185 190

ctg gcc ctc aac cgc atc agc cac atc ccc gac tac g<sup>c</sup> ttc cag aat 624  
Leu Ala Leu Asn Arg Ile Ser His Ile Pro Asp Tyr Ala Phe Gln Asn  
195 200 205

ctc acc agc ctt gtg gtg ctg cat ttg cat aac aac cgc atc cag cat 672  
Leu Thr Ser Leu Val Val Leu His Leu His Asn Asn Arg Ile Gln His  
210 215 220

ctg ggg acc cac agc ttc gag ggg ctg cac aat ctg gag aca cta gac Leu Gly Thr His Ser Phe Glu Gly Leu His Asn Leu Glu Thr Leu Asp 225 230 235 240	720
ctg aat tat aac aag ctg cag gag ttc cct gtg gcc atc cgg acc ctg Leu Asn Tyr Asn Lys Leu Gln Glu Phe Pro Val Ala Ile Arg Thr Leu 245 250 255	768
ggc aga ctg cag gaa ctg ggg ttc cat aac aac atc aag gcc atc Gly Arg Leu Gln Glu Leu Gly Phe His Asn Asn Asn Ile Lys Ala Ile 260 265 270	816
cca gaa aag gcc ttc atg ggg aac cct ctg cta cag acg ata cac ttt Pro Glu Lys Ala Phe Met Gly Asn Pro Leu Leu Gln Thr Ile His Phe 275 280 285	864
tat gat aac cca atc cag ttt gtg gga aga tcg gca ttc cag tac ctg Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln Tyr Leu 290 295 300	912
cct aaa ctc cac aca cta tct ctg aat ggt gcc atg gac atc cag gag Pro Lys Leu His Thr Leu Ser Leu Asn Gly Ala Met Asp Ile Gln Glu 305 310 315 320	960
ttt cca gat ctc aaa ggc acc acc agc ctg gag atc ctg acc ctg acc Phe Pro Asp Leu Lys Gly Thr Ser Leu Glu Ile Leu Thr Leu Thr 325 330 335	1008
cgc gca ggc atc cgg ctg ctc cca tcg ggg atg tgc caa cag ctg ccc Arg Ala Gly Ile Arg Leu Leu Pro Ser Gly Met Cys Gln Gln Leu Pro 340 345 350	1056
agg ctc cga gtc ctg gaa ctg tct cac aat caa att gag gag ctg ccc Arg Leu Arg Val Leu Glu Leu Ser His Asn Gln Ile Glu Glu Leu Pro 355 360 365	1104
agc ctg cac agg tgt cag aaa ttg gag gaa atc ggc ctc caa cac aac Ser Leu His Arg Cys Gln Lys Leu Glu Glu Ile Gly Leu Gln His Asn 370 375 380	1152
cgc atc tgg gaa att gga gct gac acc ttc agc cag ctg agc tcc ctg Arg Ile Trp Glu Ile Gly Ala Asp Thr Phe Ser Gln Leu Ser Ser Leu 385 390 395 400	1200
caa gcc ctg gat ctt agc tgg aac gcc atc cgg tcc atc cac cct gag Gln Ala Leu Asp Leu Ser Trp Asn Ala Ile Arg Ser Ile His Pro Glu 405 410 415	1248
gcc ttc tcc acc ctg cac tcc ctg gtc aag ctg gac ctg aca gac aac Ala Phe Ser Thr Leu His Ser Leu Val Lys Leu Asp Leu Thr Asp Asn 420 425 430	1296
cag ctg acc aca ctg ccc ctg gct gga ctt ggg ggc ttg atg cat ctg Gln Leu Thr Thr Leu Pro Leu Ala Gly Leu Gly Leu Met His Leu 435 440 445	1344

aag ctc aaa ggg aac ctt gct ctc tcc cag gcc ttc tcc aag gac agt Lys Leu Lys Gly Asn Leu Ala Leu Ser Gln Ala Phe Ser Lys Asp Ser 450 455 460	1392
ttc cca aaa ctg agg atc ctg gag gtg cct tat gcc tac cag tgc tgt Phe Pro Lys Leu Arg Ile Leu Glu Val Pro Tyr Ala Tyr Gln Cys Cys 465 470 475 480	1440
ccc tat ggg atg tgt gcc agc ttc ttc aag gcc tct ggg cag tgg gag Pro Tyr Gly Met Cys Ala Ser Phe Phe Lys Ala Ser Gly Gln Trp Glu 485 490 495	1488
gct gaa gac ctt cac ctt gat gat gag gag tct tca aaa agg ccc ctg Ala Glu Asp Leu His Leu Asp Asp Glu Glu Ser Ser Lys Arg Pro Leu 500 505 510	1536
ggc ctc ctt gcc aga caa gca gag aac cac tat gac cag gac ctg gat Gly Leu Leu Ala Arg Gln Ala Glu Asn His Tyr Asp Gln Asp Leu Asp 515 520 525	1584
gag ctc cag ctg gag atg gag gac tca aag cca cac ccc agt gtc cag Glu Leu Gln Leu Glu Met Glu Asp Ser Lys Pro His Pro Ser Val Gln 530 535 540	1632
tgt agc cct act cca ggc ccc ttc aag ccc tgt gag tac ctc ttt gaa Cys Ser Pro Thr Pro Gly Pro Phe Lys Pro Cys Glu Tyr Leu Phe Glu 545 550 555 560	1680
agc tgg ggc atc cgc ctg gcc gtg tgg gcc atc gtg ttg ctc tcc gtg Ser Trp Gly Ile Arg Leu Ala Val Trp Ala Ile Val Leu Leu Ser Val 565 570 575	1728
ctc tgc aat gga ctg gtg ctg ctg acc gtg ttc gct ggc ggg cct gcc Leu Cys Asn Gly Leu Val Leu Leu Thr Val Phe Ala Gly Gly Pro Ala 580 585 590	1776
ccc ctg ccc ccg gtc aag ttt gtg gta ggt gcg att gca ggc gcc aac Pro Leu Pro Pro Val Lys Phe Val Val Gly Ala Ile Ala Gly Ala Asn 595 600 605	1824
acc ttg act ggc att tcc tgt ggc ctt cta gcc tca gtc gat gcc ctg Thr Leu Thr Gly Ile Ser Cys Gly Leu Leu Ala Ser Val Asp Ala Leu 610 615 620	1872
acc ttt ggt cag ttc tct gag tac gga gcc cgc tgg gag acg ggg cta Thr Phe Gly Gln Phe Ser Glu Tyr Gly Ala Arg Trp Glu Thr Gly Leu 625 630 635 640	1920
ggc tgc cgg gcc act ggc ttc ctg gca gta ctt ggg tcg gag gca tcg Gly Cys Arg Ala Thr Gly Phe Leu Ala Val Leu Gly Ser Glu Ala Ser 645 650 655	1968
gtg ctg ctg ctc act ctg gcc gca gtg cag tgc agc gtc tcc gtc tcc Val Leu Leu Leu Thr Leu Ala Ala Val Gln Cys Ser Val Ser Val Ser 660 665 670	2016
tgt gtc cgg gcc tat ggg aag tcc ccc tcc ctg ggc agc gtt cga gca	2064

Cys Val Arg Ala Tyr Gly Lys Ser Pro Ser Leu Gly Ser Val Arg Ala			
675	680	685	
ggg gtc cta ggc tgc ctg gca ctg gca ggg ctg gcc gca ctg ccc		2112	
Gly Val Leu Gly Cys Leu Ala Leu Ala Gly Leu Ala Ala Ala Leu Pro			
690	695	700	
ctg gcc tca gtg gga gaa tac ggg gcc tcc cca ctc tgc ctg ccc tac		2160	
Leu Ala Ser Val Gly Glu Tyr Gly Ala Ser Pro Leu Cys Leu Pro Tyr			
705	710	715	720
gcg cca cct gag ggt cag cca gca gcc ctg ggc ttc acc gtg gcc ctg		2208	
Ala Pro Pro Glu Gly Gln Pro Ala Ala Leu Gly Phe Thr Val Ala Leu			
725	730	735	
gtg atg atg aac tcc ttc tgt ttc ctg gtc gtg gcc ggt gcc tac atc		2256	
Val Met Met Asn Ser Phe Cys Phe Leu Val Val Ala Gly Ala Tyr Ile			
740	745	750	
aaa ctg tac tgt gac ctg ccg cgg ggc gac ttt gag gcc gtg tgg gac		2304	
Lys Leu Tyr Cys Asp Leu Pro Arg Gly Asp Phe Glu Ala Val Trp Asp			
755	760	765	
tgc gcc atg gtg agg cac gtg gcc tgg ctc atc ttc gca gac ggg ctc		2352	
Cys Ala Met Val Arg His Val Ala Trp Leu Ile Phe Ala Asp Gly Leu			
770	775	780	
ctc tac tgt ccc gtg gcc ttc ctc agc ttc gcc tcc atg ctg ggc ctc		2400	
Leu Tyr Cys Pro Val Ala Phe Leu Ser Phe Ala Ser Met Leu Gly Leu			
785	790	795	800
ttc cct gtc acg ccc gag gcc gtc aag tct gtc ctg ctg gtg ctg		2448	
Phe Pro Val Thr Pro Glu Ala Val Lys Ser Val Leu Leu Val Val Leu			
805	810	815	
ccc ctg cct gcc tgc ctc aac cca ctg ctg tac ctg ctc ttc aac ccc		2496	
Pro Leu Pro Ala Cys Leu Asn Pro Leu Leu Tyr Leu Leu Phe Asn Pro			
820	825	830	
cac ttc cgg gat gac ctt cgg cgg ctt cgg ccc cgc gca ggg gac tca		2544	
His Phe Arg Asp Asp Leu Arg Arg Leu Arg Pro Arg Ala Gly Asp Ser			
835	840	845	
ggg ccc cta gcc tat gct gcg gcc ggg gag ctg gag aag agc tcc tgt		2592	
Gly Pro Leu Ala Tyr Ala Ala Gly Glu Leu Glu Lys Ser Ser Cys			
850	855	860	
gat tct acc cag gcc ctg gta gcc ttc tct gat gtg gat ctc att ctg		2640	
Asp Ser Thr Gln Ala Leu Val Ala Phe Ser Asp Val Asp Leu Ile Leu			
865	870	875	880
gaa gct tct gaa gct ggg cgg ccc cct ggg ctg gag acc tat ggc ttc		2688	
Glu Ala Ser Glu Ala Gly Arg Pro Pro Gly Leu Glu Thr Tyr Gly Phe			
885	890	895	
ccc tca gtg acc ctc atc tcc tgt cag cag cca ggg gcc ccc agg ctg		2736	
Pro Ser Val Thr Leu Ile Ser Cys Gln Gln Pro Gly Ala Pro Arg Leu			

900	905	910	
gag ggc agc cat tgt gta gag cca gag ggg aac cac ttt ggg aac ccc Glu Gly Ser His Cys Val Glu Pro Glu Gly Asn His Phe Gly Asn Pro			2784
915	920	925	
caa ccc tcc atg gat gga gaa ctg ctg agg gca gag gga tct acg Gln Pro Ser Met Asp Gly Glu Leu Leu Leu Arg Ala Glu Gly Ser Thr			2832
930	935	940	
cca gca ggt gga ggc ttg tca ggg ggt ggc ggc ttt cag ccc tct ggc Pro Ala Gly Gly Leu Ser Gly Gly Phe Gln Pro Ser Gly			2880
945	950	955	960
ttg gcc ttt gct tca cac gtg Leu Ala Phe Ala Ser His Val			2901
965			